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DUN'S REVIEW

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LXI of a series of Century old cities - Dayton

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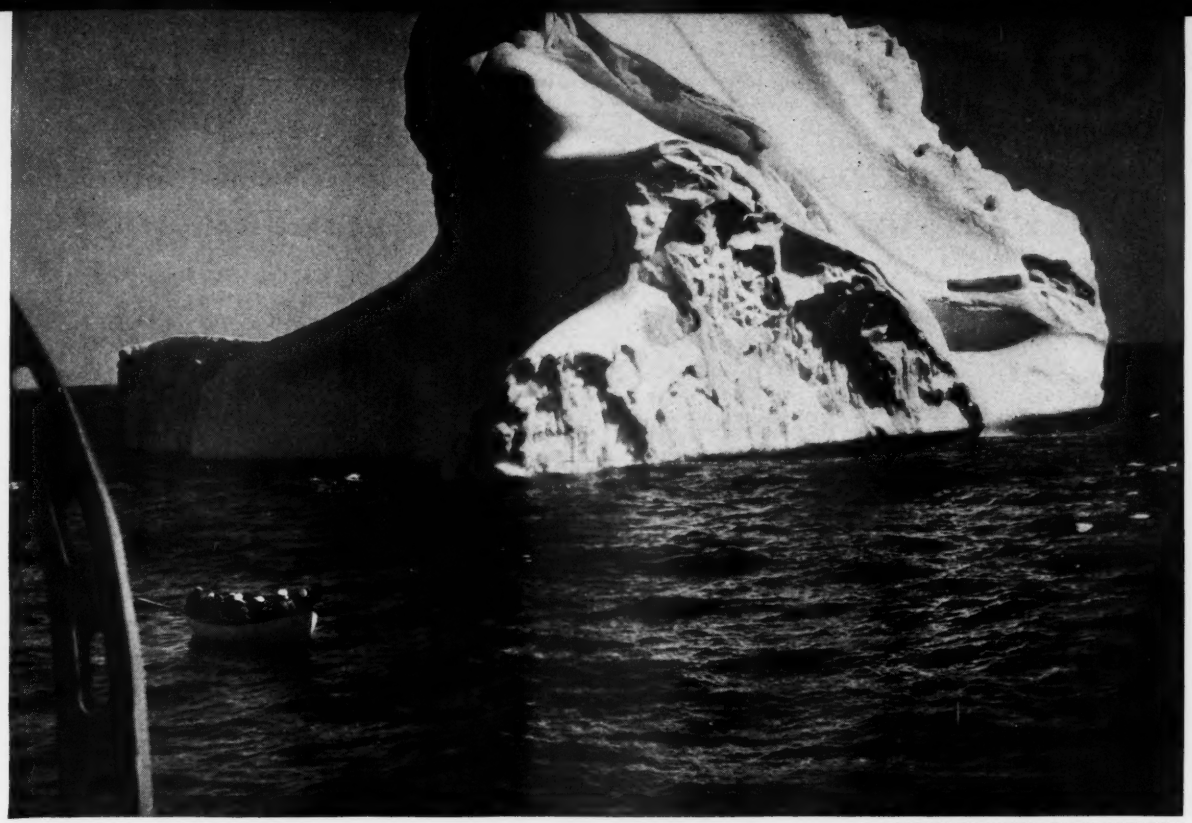
This Month's Cover

DAYTON, OHIO

Dayton, where Wolf Creek, Stillwater and Mad Rivers join the Great Miami, was settled in 1796 by veterans of the Revolution. It was named for another veteran, Jonathan Dayton, a New Jersey Congressman. In 1803 it became the seat of Montgomery County. Incorporated as a town in 1805, it grew rapidly after opening of the Miami and Erie Canal in 1828, and in 1841 was incorporated as a city. . . . In 1846 the print reproduced for the cover of "Dun's Review" was drawn. It is shown through courtesy of the Dayton Public Library. . . . Since about 1919, Dayton has been protected against floods by a control plan established after a disastrous flood in 1913. The year following that flood, Dayton, rebuilding itself, became the first major American city to adopt a city manager form of government. . . . Today the city is primarily industrial and its people skilled. In Dayton the automobile self starter was conceived and completed; the electric refrigerator perfected; and in a small bicycle shop there, as well as above a vacant lot at its outskirts, the Wright Brothers gave man wings. . . . Ranked fortieth in the United States, Dayton has a population of 210,718 (1940). Retail sales of $106,477,000 by 2,762 stores stand thirty-eighth in the country (1939 census). The 328 wholesale establishments have sales of $117,941,000. Products made by 415 manufacturing establishments include airplane and automobile parts, rubber goods, paper and envelopes, machine tools, and cash registers. To war production go airplanes and parts, munitions and ordnance. Two Army flying fields, Wright Field and Patterson Field, are located there.



U. S. COAST GUARD ICE PATROL—HARRIS & EWING PHOTO

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In Charge Department of Business and Engineering Administration, Massachusetts Institute of Technology

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WILLARD L. THORP
Editor of DUN'S REVIEW

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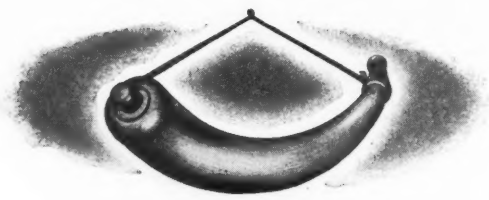
KEEPING AMERICA'S POWDER DRY...



and cool too!

Today, though few people realize it, refrigeration and air conditioning are basic war industries.

Modern air conditioning not only keeps America's powder dry, but keeps it cool to retard deterioration. Refrigeration speeds the manufacture of the powder, and of the shells that it drives. Air conditioning protects both worker and product in shell-loading plants, permits watch-maker precision in making fuses and detonators.

Air conditioning makes modern blackout plants possible, vitalizes the fire control rooms, spotting rooms, turrets and magazines of battleships, the pilots' ready rooms in aircraft carriers, makes U.S. submarines the most effective in the world.

Refrigeration aids the riveter in the aircraft plant, enables the refiner to supply the appetites of planes and tanks and trucks with the high octane gas that modern fighting machines must have. Refrigeration is easing the critical steel shortage by making possible more iron and better iron from existing blast furnaces. And refrigeration continues to feed fighting men on the farthest flung battle lines the world has ever known, in great cantonments at home and on desolate island bases from the tropics to the polar circle and on the ships between.

For the past 18 months, York men and York machines have been on the defense firing line, engineering, building and installing equipment for all phases of titanic struggle.

Today, it's *war*, not mere defense. And now the tempo mounts and York goes truly all-out as every last man in the works and in the field comes to feel that the only tolerable outcome, unequivocal victory for Liberty, rests to some degree in his own two hands.

York Ice Machinery Corporation, York, Pennsylvania.

YORK

HEADQUARTERS FOR

York Manpower, Facilities, Experience, cover the Nation

Pioneers in mechanical cooling for 57 years, York engineers today enjoy the richest heritage of experience in the twin industries of refrigeration and air conditioning. This experience, the unparalleled facilities provided by two huge headquarters plants at York, Pa., ten strategically located branch plants (each with its own engineering and construction staff) and field offices in principal U. S. centers, make York a truly *national* institution. York's 4079 loyal patriotic workers, reinforced by 1650 other good citizens in the York distributor organization, make it truly American.

★ ★ IN 1917-1918 ★ ★

Refrigeration in World War I was employed mainly for the preservation of food, while air conditioning, as we know it now, had yet to be developed. Nevertheless, York men served with distinction and York shops devoted 90 per cent of their capacity to war work.

York planned and built machinery for the mammoth AEF meat and ice plant which was built and operated at Gievres, France, by the 301st Ice Plant Unit which was recruited in York.

York supplied refrigeration for 593 U. S. ships including cargo vessels, battleships, transports, destroyers, mine-layers, mine-sweepers, colliers, tankers, supply ships, repair ships, submarine tenders, hospital ships, ammunition ships, eagle boats, lighthouse tenders; for four Army cantonments, eleven cantonment hospitals, thirteen powder plants, five ammunition plants, five ammonium nitrate plants; for the U. S. Naval Academy at Annapolis, the U. S. Marine Corps Barracks, Port Royal, S. C., Aberdeen Proving Grounds, U. S. Navy Ordnance Depot, Baldwin, N. Y., and for St. Elizabeth's Hospital, Washington, D. C.

"KEEP'EM FLYING!"

Refrigeration and Air Conditioning

MECHANICAL COOLING SINCE 1885

HE DETECTS LINE LEAKS WITH STETHOSCOPE—FREE LANCE PHOTOGRAPHERS' GUILD PHOTO

OF the difference between turning out civilian products and turning to the manufacture of products for war. Of opportunities too in the need for "maintenance-on-the-fly," and, beyond the war horizon, the avid peace-time market. Of these and the fundamentals of product development for each, Mr. Schell writes.

PRODUCT DEVELOPMENT

The Ugly Duckling of Business

ERWIN HASKELL SCHELL

Professor of Business Management
Massachusetts Institute of Technology

As an administrative responsibility, the wartime development of new industrial products by American industry requires little to justify its importance. Entering an era in which our energies must be devoted to survival as a nation and as individuals, after our enemies have taken the aggressive in the origination and output of new products, both military and civilian, we must accept the simple slogan of "do or die."

With every evidence at hand that a long and difficult struggle is before us, we are justified in viewing the problems and opportunities in new product development in the light of their long-term as well as short-term significance. A useful classification is one which distinguishes between product development for military use, direct and indirect; for civilian; and for post-war use.

Product development for direct military use differs in approach from that for civilian use. The beginning of wisdom in matters of military production is that the manufacturing operation, rather than the manufactured product, is the basic unit for consideration. When we take due care of the operations, the products will take care of themselves. Product development for military usage is, in the last analysis, an operational development. As peace-time markets are product markets, the typical manufacturer may assume that he is called upon to produce a complete product for the government—a co-ordinate task which for the smaller producer often calls for special skills and facilities beyond the range of his resource. A more effective point of view is that of the manufacturer who surveys the individual operations which he may perform for military production, these possibly to be conjoined with those of other organizations in order that the final output be a completed product.

In product development for direct military use, which normally involves the fulfilling of a government contract or attendant sub-contracts, the first step is an analysis of manufacturing operations. The typical operation involves a change of form. Normally it requires the presence of six elements: work-place, materials and supplies, machines,

special tools, special gages, and special skills. Each of these elements must be examined in terms of quality and quantity required.

Two other aspects of unit operation require equal study. The transporting function, which involves a change of place, requires special arrangements or layout, equipment, and often skills. Again, the storage operation, which incorporates a change of time, requires adequate space facilities, equipment, and trained personnel. It is only through the painstaking analysis of these three kinds of manufacturing operations that product development for military use may be approached.

Once these studies have been made, a fourth analysis is essential. The management requirements should be analyzed in order that facilities and personnel may be available to plan these operations, to procure the necessary facilities, to co-ordinate them, and to maintain them.

In planning the readjustment of plant operations to military production, radical changes may be necessary. Obviously, changes in packaging may take place with the least effect upon plant procedures. Next, in downward order of increasing difficulty, are changes in minor dimensions of product, nature of product, production equipment, materials, and operator skills.

Labor dexterity is the final and pivotal factor about which industries swing in meeting the changing conditions of demand. Instances are at hand where companies have thrown out of the window their packages, their products, their equipment, and their materials, in order to conserve and put to new uses the special human facility which is concentrated within their employee group. Such skill is often surprisingly negotiable. For example, it has been found that certain operations in fuse manufacture are well performed by employees previously adept in the needle trades.

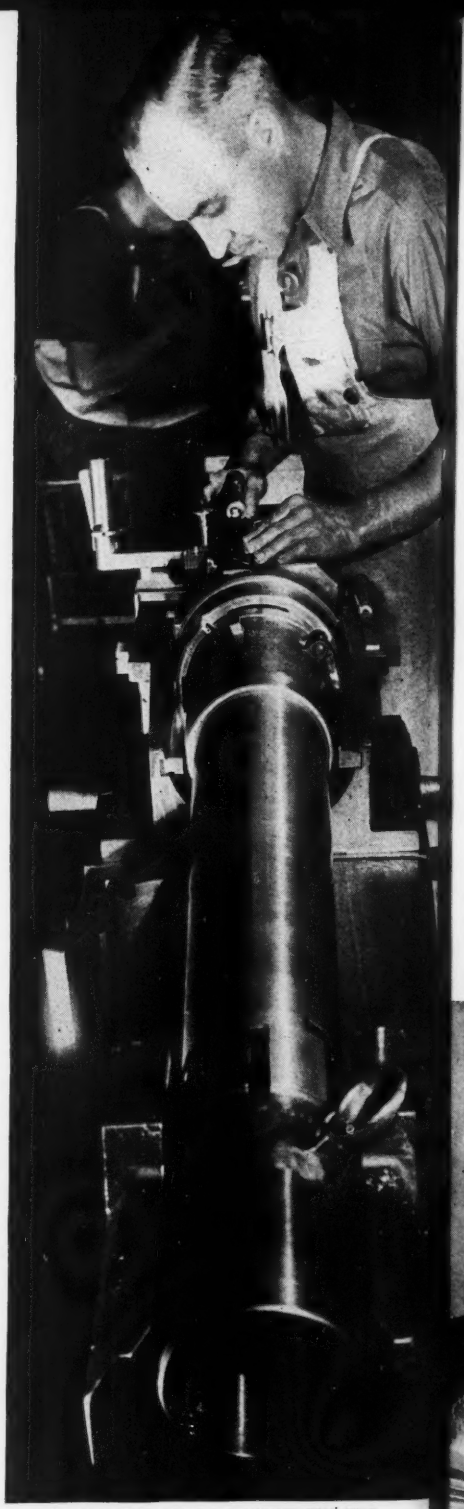
The second step in product development for direct military use is that of bringing together specific plant capacities and specific military needs. The technique here draws largely upon the distributive rather than the productive approach. It is typical of this approach that the distributor leans heavily upon the law of probability, while the producer tends to depend upon the law of action and reaction. It has been said that, when a production operator does not fabricate every piece, he falls down. Conversely, when a salesman sells every prospect, he falls dead.

The manufacturer may apply two basic methods of effecting contacts. These procedures are very old. In excavating for the foundations for a large building in a New England seacoast city there were found thirty feet below the surface of the ground, both the bone fish spear for selecting a catch and the willow fish weir for snaring everything within reach. Any product development activity makes use of these two fundamental devices. There should be, first, an organization for aggressive search for government contracts or subcontracts and, second, a structure which will bring to executive attention, or attract to the establishment, opportunities for which the company is fitted in point of service.

In effecting these relationships between the company and the government, a common difficulty has been that of quality requirements. Manufacture of war materials inevitably calls for high precision. Stresses and strains involved in combat over uneven terrain, coupled with essential flexibility, introduce difficult demands upon design. When the necessity for high accuracy of fire power is added, the severity of specification is multiplied. When we read of desert tank battles in which hostilities begin at 7,000 yards, some idea of practical requirements may be gained.

To meet the close tolerances called for in military manufacture is one of the most concerning problems of many wartime manufacturers; and its solution is the responsibility of the product development engineer.

The third step in product development calls for the closest mutual collaboration between the military arm and the plant. In the present conflict, Government procurement agencies are increasingly equipping themselves with



SPOTTING THE HOWITZER—FREE LANCE PHOTOGRAPHERS' GUILD

engineers whose task it is to assist the vendor plants in conversion to military manufacture. Government parts and operations lists as well as cost data are being made available to prospective bidders; Government arsenals are opening their processes and methods to inspection by prospective producers; and arrangements are being effected whereby new entrants into the field may visit other plants where contracts are under way. There is evidence that every effort is being made to facilitate new product development by prospective contractors. Here is an initial advantage not offered under conditions of competitive manufacture which should be capitalized to the utmost by the man in charge of product development.

For Indirect Military Use

Indirect military use relates to the manufacture of industrial machinery, and other supplies or equipment which in normal times we should consider as industrial goods. Here the product is valuable because of what it will produce. Companies turning out such equipment are literally manufacturing productive capacity, although the implements by which this capacity is acquired may be machines, special tools, facilities or fitments of a variety of types. While the industrial market is buying these products, it is in reality buying productivity—or processing.

Here product development faces a new requirement. First and foremost, the customer's future needs must be analyzed and assayed. The closest and most advanced collaboration between producer and potential customer is imperative. Indeed it has been said that this form of product development may best be carried on in the customer's plant. We must go where the problem is and begin our solution even before the issue has emerged. Co-operative planning is vital to success.

Product development accepts as an important responsibility the developing of the customer's process no less than his facilities. To design processes for customers seems a long cry from product design as we have known it in the past. Nevertheless, when time and output are of the essence, to advance the art of military manufacture will become an important service to the manufacturing customer. Beset as he is with problems of organization and expansion, the government contractor or subcontractor has little time to give to the evolution of his productive equipment. To feel that the vendor of these facilities is collaborating closely with him and is indeed thinking for him in terms of future output and quality requirements provides a resource which will be increasingly important as the national effort gets into full swing.

New problems confront such product development. Facilities for military production are facilities for continuous production. Maintenance features applied to equipment which is under twenty-four hour production seven days a week, involve new requirements for which there is little precedent to guide. In the design of airplane motors and allied mechanisms, this prerequisite of maintenance-on-the-fly has received considerable attention, but it is true that very few industries have found it necessary to accept this as a part of product development.

A second factor of growing importance is the necessity of designing productive equipment so that the activities of machine set-up may be sharply differentiated and separated from those of machine operation. To better the degree that operation may be assigned to relatively unskilled personnel, the opportunity for plant expansion may directly increase or decrease. The inevitable influx of women into industry adds to this requirement other necessities in relation to materials handling which further complicate design.

As a third problem, precision standards under continuous production call for the introduction of oversize wearing parts, and other safeguards to close tolerances.

To be at the scene of action where these three requirements show themselves in clearest outline, is the best method which the manufacturer of industrial equipment may take to strengthen and maintain his trade re-

BOMBARDIER TRAINING AT ADVANCED FLYING SCHOOL, NEW MEXICO—HARRIS AND EWING PHOTO

lationship with the military manufacturer, a method worthy of attention.

For Civilian Use

In times of peril human beings tend to draw together and to cherish past relationships with one another. This basic characteristic is the foundation upon which product development for civilian use is to rest. Once again the quality to be sought for in the new product is primarily that of its trade relationships and only secondarily of its nature, form, or substance. The supreme objective here is the continuation of customer buying activities. Product development for civilian use is maintenance-of-trade development, and where manufacturers reach ultimate consumers through distributors it is clear that to hold distributors is to enable them in turn to hold customers.

If we are to keep alive these trade relationships, we must provide a medium. There must be something to sell. Words of condolence and promises of future return to active business relationships when the war is over are not enough.

TANK LEAVING THE ARSENAL, IN DETROIT—FREE LANCE PHOTOGRAPHERS' GUILD

The technique of civilian product development under these conditions varies widely from orthodox procedures. The first and vital step is an analysis of consumer income. A study of consumer buying power in terms of price levels and trends may reveal that extraordinary changes are taking place. Family incomes are being markedly affected not only by wage levels but by the inclusion of more of each family unit in gainful occupations. To maintain trade relationships will mean corresponding adjustments in product values and prices.

This leads us to the second requirement of product development in this group—the determination of customer buying motives and tendencies. There is no question but that the hazard of changing patronage during price fluctuations is always very great. Assuming that a given clientele has increased buying power, it does not necessarily follow that more attractive, stylish, or æsthetic products will be sought. It may well be that utility value will continue to dominate the buying motive.

If we array those qualities which go to make the consumer product desirable in the eyes of the prospective purchaser, the ranking runs something like this. At the top we may find the quality of appearance, but under stress of limited choice, appearance will give way to the quality of convenience, and convenience in turn will withdraw in favor of varied usefulness. This quality next tends to suffer when matched against the factor of durability. Finally, economy of operation and economy of purchase represent the most fundamental qualities in our list; and in time of great stringency all other factors may be thrown over in favor of the last-named quality. The layers of appeal thus rest as follows: appearance, convenience, varied usefulness, durability, economy of operation, and economy of purchase.

During wartime the problem of new product development is to ascertain where in these strata a given group of consumers will find the optimum appeal.

Last, we must develop the use of new materials in old products. Unfortunately, the term substitute carries a connotation of inferiority. Much has been written of the failure of the "ersatz" materials, and it has been all too readily assumed that substitution means retrogression. This is not in accord with the findings of progressive companies which for some time have been active in substitute development. Frequently

the substitute not only provides an alternative product but a better product.

Product development in its broadest sense may here incorporate public relations activities. We all recall the practice of large companies which in earlier days made it a custom to publish word of their large payments to inventors. There is little question but that this policy brought many other ideas to their door. Today, organizations which find it possible to make their material wants known may more readily learn of technical progress elsewhere and may use that grist in their own mill. Product development here calls for the aggressive merchandising of company dollars—a new kind of creative buying. Once again, the analogy of the weir and spear may be in order, and product development activities may be fundamentally classified into these two categories.

For Post-War Use

Products for peace are now distant products, and the exigency of war will determine whether the development of such items should be given sufferance or be discontinued altogether. Here we return to more orthodox practice for here new product development is directed to the product itself. This is the true bailiwick of industrial research as we have come to use the term.

The harsh and costly fires of experience through which industrial research departments have passed reveal certain rules of action which are now sufficiently clear to be stated simply:

1. Assemble a healthy group of long-term research projects. This is not the task of the research director, rather is it the responsibility of a research committee composed of the imaginative brains of the business. Such research is not to be trouble-shooting nor is it to be in the nature of refinements in the present manufacturing processes or products. The task here is to bring together a sufficient number of practical possibilities for investigation so that there may be a surplus of projects from which the newly organized research department can make selections. As an example of such a project, I recall the request of the president of a prominent food manufacturing concern who remarked to his research director, "I wish you would find for us something that a dog likes as well as a cat likes catnip."

2. Organize a working unit of research skills. Industrial research does not divide in terms of product or of process. It divides in terms of dexterities, or disciplines. Chemistry, physics, metallurgy, optics—these are illustrative divisions of effort which may be brought together to form a department peculiarly suitable for the work at hand.

3. Release enough projects for a normal load upon the research unit. Here we should first test our accumulation of research projects against certain long-term criteria before assigning them for study. For example, should the research be effective, precisely what might be its dollar-and-cents value to the company in point of possible returns? Should a project be authorized, it would be well to make only partial appropriations; for research projects to remain vigorous must be tentative in nature with support just sufficient to carry the investigation to a stopping place where past progress may be evaluated, present problems arrayed and future prospects estimated.

4. Establish regular periods for reports of past activities, present status and future plans and possibilities. In some laboratories these evaluations occur weekly with major summations of progress at monthly, quarterly, or half-yearly intervals.

5. Carry project development through the stages of post-research development into small-scale production and distribution. Post-war product development is so vital to the future health of the business that no stone should be left unturned in the assembly of facts assuring practical usefulness and customer acceptance.

6. Divorce research from all relationship with current operation. Close relationship with operating executives, particularly in wartime, will be a handicap to research because such individuals are properly and characteristically concerned over immediate issues and their influence is often unwittingly disturbing to research specialists whose efforts are directed in terms of the long pull.

WELDER—MONKMEYER PHOTO

7. Provide research incentives. Needless to say, research cannot be put on piece-work. Yet there are factors which materially enhance the zest with which the research worker approaches his problem. Among these may be mentioned a total working situation which eliminates as far as possible all personal concerns and worries. The creative mind works best in an atmosphere of placidity and calmness. The assurance of fair dealing is vital. The mere shadow of suspicion that credit may not be justly given is enough to destroy a

large proportion of creative effort. Opportunity for professional prestige often provides incentive of a wholesome and constructive sort, while some laboratories have found that ungrudging and immediate wherewithal in the form of materials and supplies is an element which makes for minimum irritation when the creative mind is burning with its problem.

To organize, implement, and maintain this kind of industrial creativeness calls for administrative foresight and intelligent courage of a high order.

Corporate Continuity

Most of human effort is predicated upon necessity. Even as managers or administrators much of what we do is done because we have to. Someone has said that liberty is knowledge of necessity. The difficulty is that necessities are sometimes cleverly concealed and do not appear until it is too late. This condition frequently applies in the four divisions of product development which have been outlined.

For example, there will be an increasing number of companies working directly upon government contracts where there is no obvious necessity for product development. They have been sought out by procurement agencies, their path of conversion has been smooth, and they find themselves at capacity production with further expansion under way. Yet the need for product development while not obvious is no less real in such instances. Such companies may collaborate with governmental designers to the end that the very operations themselves may be improved upon in point of greater speed of delivery and greater assurance of quality. More than this, co-operative design may materially increase the fullest application of company equipment so that the plant is not only running continuously but that its machine load factor approaches 100 per cent. The military state of the art is in rapid flux. Changes in processing are the order of the day. The company whose product development division is well established is much better fitted in point of versatility and ease of adjustment to meet these new requirements as they appear.

It is again entirely conceivable that industries supplying industrial goods to military manufacturers do not feel the demand for adjusting their output to the future needs of their customers. Indeed their customers may be glad to obtain any type of machines which are available and may not look for or anticipate changes or improvements in such machine design. Furthermore, there may be no immediate indication that such a request from present customers may develop.

Yet here necessity lies only thinly veiled. The company which does not take advantage of the current changes in the state of the arts as they appear in the fabricating department or along the assembly line in their customer's plant, is throwing away a precious opportunity. Progress in processing inevitably takes place. It is born out of the very difficulties and exigencies of the work itself. The manufacturer who does not acquaint himself through proper product development organization with these current changes is inevitably building to his own future disadvantage. Manufacturing will move forward without him.

Again the producer of civilian products may believe that he has the world by the tail so far as post-war patronage is concerned. For one reason or another he may be convinced that the future is assured and that nothing can prevent him from returning to peace-time production with every certainty of success.

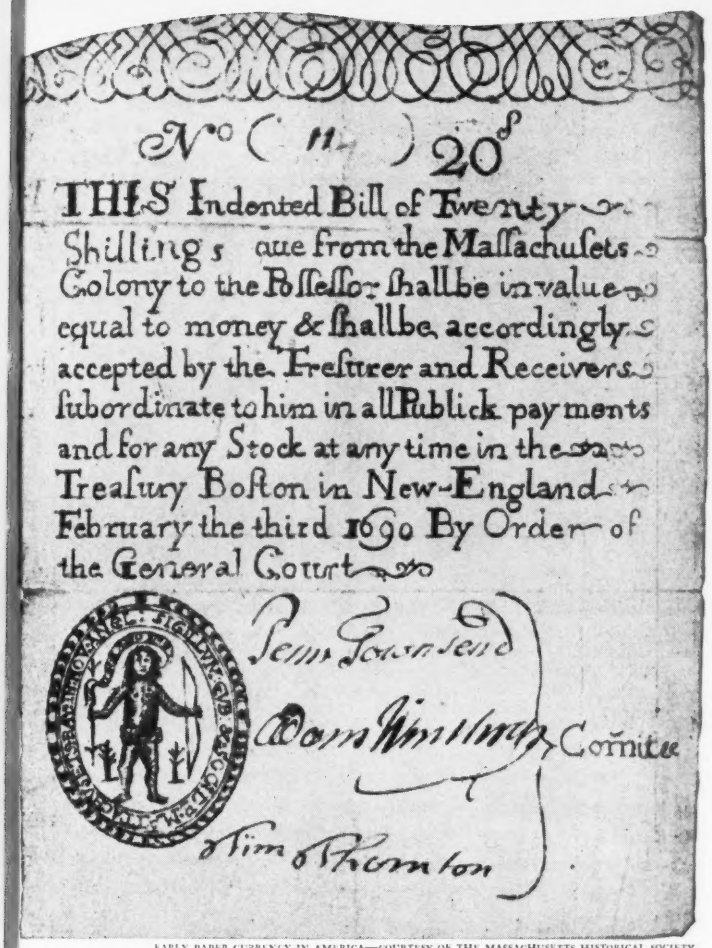
Even here necessity may lurk unseen in the field of trade relationships. Constant evidence of the producer's sincere and active interest in his pre-war vendors and customers is a type of insurance which cannot be purchased with surplus funds. A conscientious attempt to assure continuing usefulness and service to the trade begets a quality of good-will which no concern can afford to overlook no matter how favorable its future appears to be. Nothing can take the place of continuing trade confidence and business friendship. Any manufacturing policy which assumes that these qualities do not require constant nourishment and maintenance is doomed to serious disappointment.

If these unseen necessities can be summarized in a word, it is that product development is but the recognition of heightened world tempo. Industrial technology is on the march and we must step to its measure or we shall be left behind and alone.

Over the four areas of product development which have been outlined, certain characteristics seem common to all. In each instance an unknown area must be explored. It may be the gamut of military needs, the range of future

(Continued on page 45)

HOBART PHOTO


THIS Indented Bill of Twenty
Shillings are from the Massachusets
Colony to the Possessor shall be in value
equal to money & shall be accordingly
accepted by the Treasurer and Receivers
subordinate to him in all Publick payments
and for any Stock at any time in the
Treasury Boston in New-England
February the third 1690 By Order of
the General Court

EARLY PAPER CURRENCY IN AMERICA—COURTESY OF THE MASSACHUSETTS HISTORICAL SOCIETY

From Wampum to Continental Currency

Early financing in the new American world; the first article in a series reviewing the growth of financing technique and institutions in this country.

ROY A. FOULKE
Manager, Specialized Report Department
DUN & BRADSTREET, INC.

"ABOUT foure a clocke in the morning" April 26, 1607, the *Sarah Constant,* the *Goodspead,* and the *Discovery* sailed into the Bay of Chesupioc bearing 105 of an original 120 men bent on setting up the first permanent English colony in America —James Towne. They were duly commissioned to grow the crops, to explore the neighboring country, to convert the Indians to Christianity, chiefly to find profitable mines of precious silver and gold like had been done long ago in Mexico and Peru to the greater glory of Spain.

"The Treasurer and Company of Adventurers and Planters of the City of London for the first Colony in Virginia," later known as "The London Company," obtained its charter April 10, 1606, from James I. Those days Virginia was a broad term embracing the entire Atlantic shore of North America as far north as the Hudson River.

This charter was granted to Sir Thomas Gates, Sir George Somers, Edward-Maria Wingfield, Thomas Hanham, Raleigh Gilbert, William Parker, George Popham, other merchants, traders, and landed gentlemen. They knew no more about America than the typical present-day investor knows about the oversea interests of any large American corporation with ramified international interests, in which he is a stockholder. Shares were originally sold to 203 investors at twelve and one-half pounds each, a number greatly increased at later organizations. Thirteen of the original shareholders were also investors in the Muscovy Company that monopolized trade with Russia, and 116 were investors in the even more successful East India Company. Quick and large profits were expected from Virginia.

This first permanent English settlement is of deep and peculiar interest to us because it was absolutely and fundamentally a business venture, a matter of investing money to earn a financial return. The London Company owned James Towne, the land, the equipment.

It had property rights for a stated number of years in the labor of settlers sent over. Moreover, the company provided taskmasters, it fed and clothed the laborers, it owned the produce resulting from this labor. In the modern sense, the James Towne settlement was an industrial branch of the London Company, headquarters in England.

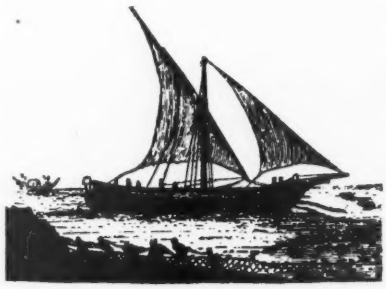
Emergence of the profit system in sixteenth and seventeenth-century England was characterized by vast accumulation of capital. This was increasingly invested in ships and goods to be sold throughout the known world, accumulating more capital. Drake, Hawkins, and Raleigh further filled the coffers, preying on the Spanish Main and trafficking in the profitable slave trade. By 1607 England's naval supremacy was acknowledged and its great merchant fleet rivalled the best.

Yet, Spain not England was the world's most powerful nation. Spaniards found the world's richest silver mine at Potosi in 1545. The steady flow of this precious metal gave Spain wealth to dominate a commercially expanding Europe down to the crushing of the Invincible Armada. By 1574 Spanish settlers in America numbered 152,000. If the Spaniards could find silver and gold so easily in Mexico and Peru, the English could do likewise in Virginia, or so the English hoped.

In those days increases in the home stocks of silver and gold were considered absolute wealth in all the chancelleries of Europe, a theory not exploded until publication of Adam Smith's *Wealth of Nations* in 1776. There were no large-scale manufacturing industries to invest in. So, English merchants gladly furnished the funds for exploration and colonization as profit-making ventures, particularly where the return was confidently expected in silver and gold.

So, we find during this period, that the English merchants who might have invested their surplus funds in large-scale manufacturing industries, if such a form of investment had been known at the time, gladly furnished the funds for exploration and colonization as profit-making ventures, particularly where the return was confidently expected to be in the direct form of precious metals.

James Towne was barely one year old when the London investors, depressed at seeing no quick profits, indeed, profits of any kind, demanded



Fishing Shallop, 1630—*Courtesy of The Marine Research Society, Salem, Mass., and Seamen's Church Institute of New York.*

their pound of flesh. If cargoes of goods worth 2,000 pounds were not immediately forthcoming they threatened to forsake the settlers to tomahawk and starvation. Conditions in the colony were horrible. Many of the settlers had already died. There was no silver, there was no gold. Only timber could fill the bill. The entire community turned to, felling trees, trimming logs for that homeward shipment.

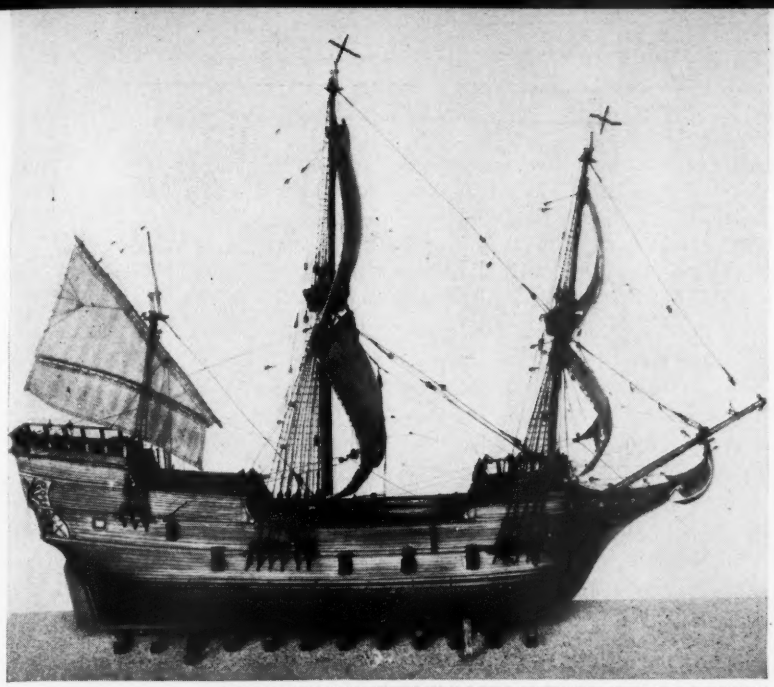
Lack of profits brought crisis to the institution in London. When shares were originally sold, only a portion of the capital was requested. Many investors counted on immediate profits to meet their second installments. Consequently many of the original investors refused to pay the second installment; even more refused to pay the third. Whereas 52,624 pounds were subscribed in stock from 1609 to 1619, only 36,624 pounds were actually paid in.

The company's financial condition was quite serious as early as 1610. Lacking working capital, Treasurer Sir Thomas Smith, greatest merchant of his day (powerful men managed the London Company), borrowed against these unpaid subscriptions to keep the business alive and to finance follow-up voyages to Virginia. As the company continued to fail to show profits Smith was accused of mismanagement and in 1619 was succeeded by Sir Edwin Sandys, statesman, who did no better.

In 1621 the company was virtually bankrupt but like many modern businesses it managed to drag along, year after year. In 1624 its charter was finally annulled, and the colony became a royal province administered directly under the authority of the king. During the fourteen years about 150,000 pounds were sunk in this unprofitable venture.

Planting a colony thousands of miles westward presented tremendous difficulties. It had to be supported with the costly transportation of requisite foods, guns, ammunition, farming equipment, tools, cattle, and household goods. It was not so enchanting, so successful, so profitable as raiding the

A BROAD background of wilderness and Indians, barter and wampum, and shrewd white men is as invigorating as it is necessary to an understanding of colonial financial growth. Against such a background Mr. Foulke here draws the more specific problems the colonists faced and solved. To apprehend the tremendous importance of barter and the perennial lack of metallic currency is to understand much of our early financial history. High lights are sketched rapidly to capture much of the author's rich material gathered as part of his research for his recently published *The Sinews of American Commerce*. This story of financial institutions and their evolution to modern times will continue in future issues.



COURTESY OF THE NEW YORK MUSEUM OF SCIENCE AND INDUSTRY. MODEL BY C. J. MUHLFELD

The Mayflower*—Of all old ships probably this three-masted, double-deck vessel of 180 tons is best known to all Americans. It was a larger boat than the* Sarah Constant, Discovery, *and the* Goodspead *that thirteen years previously had borne the settlers to James Towne. Its length on keel was 64 feet, beam 26 feet, and length from stem to post was 90 feet. It carried twelve brass guns: eight minions, four sakers. The* Mayflower *was more or less typical of the seventeenth century bottoms that plied the seas with cargoes in that expansive era of merchant capitalism.*

Spanish Main, slaving, trading with distant India!

Finance Plimoth by Loan

The *Mayflower* sailed from Plimoth, England, for Virginia September 6, 1620, a little more than thirteen years after the colonization of James Towne.

Negotiations for permission to plant another colony in Virginia began three years previously, in December, 1617, when the initial request was forwarded from Leyden, Holland, signed by the greater part of the Pilgrim congregation. Discouragement followed discouragement, including the dissension within the ranks of the London Company. Finally through the influence of Sir John Sandys privilege was granted. Now it was necessary to obtain capital.

Thomas Weston, a merchant of London, had heard of the negotiations being carried on with the London Company. The Pilgrims were sober, industrious, God-fearing characters, and looked like a safe investment. Weston went to Leyden to confirm his belief. After this meeting he and his associates were so satisfied with the opportunity for profits and the safety of what money they put out, that they offered to furnish the necessary funds to finance the Pilgrims on their contemplated voyages across the ocean.

The agreement provided that the entire company of 101 emigrants would constitute a partnership responsible to the London merchants for all credit advanced. As guaranty, the emigrants bound themselves to work for a period of seven years, to place their produce into a common warehouse and to receive their subsistence out of the common store.

After seven years there would be a settlement. Services of each emigrant would be rated as a capital of ten pounds. For every ten pounds of property he brought along he would receive an additional share. All profits would be reserved for the seven years when the entire amount, and all houses and land, gardens and fields, would be divided among the shareholders according to their respective interests. A London merchant, advancing 100 pounds would receive tenfold more than the penniless emigrant for his entire service of the seven years! That equation certainly gives an early relationship between the value of capital and labor!

Weathering a stern sea the Pilgrims sighted land November 6, 1620, but far to the north of Virginia. For weeks they searched the coast for a satisfactory harbor, amid snow and rain, with illness rampant, and food supplies running low. Finally on December 21 they landed at Plimoth.

Unlike the gentlemen soldiers of fortune who had settled at James Towne, the Plimoth settlers were petty farmers, laborers, and artisans accustomed to hard work who planned permanent settlement.

In 1626, after six of the seven years had elapsed, Izaack Allerton sailed to England to negotiate a final settlement. The Pilgrims were still indebted 1,800 pounds. The new agreement provided that the Pilgrims were to obtain title to all possessions in the colony, 1,800 pounds to be paid in nine equal yearly installments of 200 pounds each.

Other outstanding obligations amounted to 600 pounds, nominal when compared with the staggering losses of the London Company but substantial to men who had spent their entire lives on the bare margin of existence, sufficiently so, to give concern to William Bradford, Miles Standish, William Brewster, John Alden, Thomas Prence, Edward Winslow, John Howland, and Izaack Allerton, as to how they could be discharged.

It was agreed these particular men should form a general partnership in behalf of the entire colony, to trade colonial and English merchandise hoping thus to retire these debts. Allerton concluded an arrangement with three of the London backers, James Sherley, a goldsmith, John Beauchamp, a salter, and Richard Andrews, a shipowner, who agreed to become partners in the trading agreement. They would purchase merchandise in England which would be sent to the Plimoth partners to be sold to the settlers, or traded with

the Indians or European fishermen. In turn the partners in England would receive and sell for the account of the Plimoth partners all shipments from the colony.

Unfortunately the English partners undertook certain speculations without the knowledge and approval of the colonists; they disagreed among themselves and Sherley pocketed the proceeds of the sale of some later shipments, and business was further complicated by poorly kept records, in England and in Plimoth.

Disputes were carried on year after year. The final agreement recounted the Pilgrim partners were still indebted to the three English partners for 1,200 pounds, of which 400 pounds would be paid as soon as releases would come from the English partners, and the remaining 800 pounds in yearly installments of 200 pounds each. Under this arrangement it took the Pilgrim fathers until 1645, 25 long years, to repay their merchant-backers.

From Wampum to Paper

When Captaine Newport sailed away from James Towne June 22, 1607, two months after landing the expedition, the colonists had provisions only for thirteen or fourteen weeks. By September 10, 46 of the adventurers had died from illness and lack of nourishment.

When their victuals were "within eighteene days spent" 28-year old John Smith with sweeping self-possession went out to deal with the Indians. Fortunately the wise, profit-seeking merchants of the London Company had included "blew" beads, bells, and pins in the first cargo. These, among other things, Smith skillfully traded for bushels of Indian corn.

Unfortunately, James Towne settlers in their zeal for precious metals, did not realize the immediate necessity of cultivating large crops. They planted a little wheat, a few pumpkins, potatoes, and some mellon, hardly enough to sustain an entire colony. They had banked too heavily on a steady flow of materials and supplies from the London Company. "There was no talke, no hope, no worke, but dig gold, wash gold, refine gold, load gold," lamented Smith.

The Pilgrims on the other hand were more practical. They augmented dwindling supplies with fish, clams, and fowl, until the auspicious harvest which occasioned the first historic Thanksgiving. The elders carefully estimated this harvest would suffice the entire colony for no longer than six months. However, wheat grains and pea seeds transported with utmost care from England, planted and painstakingly cultivated, turned out to be almost worthless, for some unexplained reason.

Lower dropped food supplies, until late in the Summer of 1622, Governor Bradford watchfully doled out to each person but one-quarter of a pound of bread per day. And the Pilgrims had failed to bring along "blew" beads and such which could have been traded for precious corn with the more friendly Wampanoag Indians of the north. Luckily, the English trading ship, *Discovery,* under Captaine Jons, sailed into Plimoth harbor. With him the settlers forthwith bartered, trading beaver skins for welcome English beads and knives to delight the Indians for some of their golden grain.

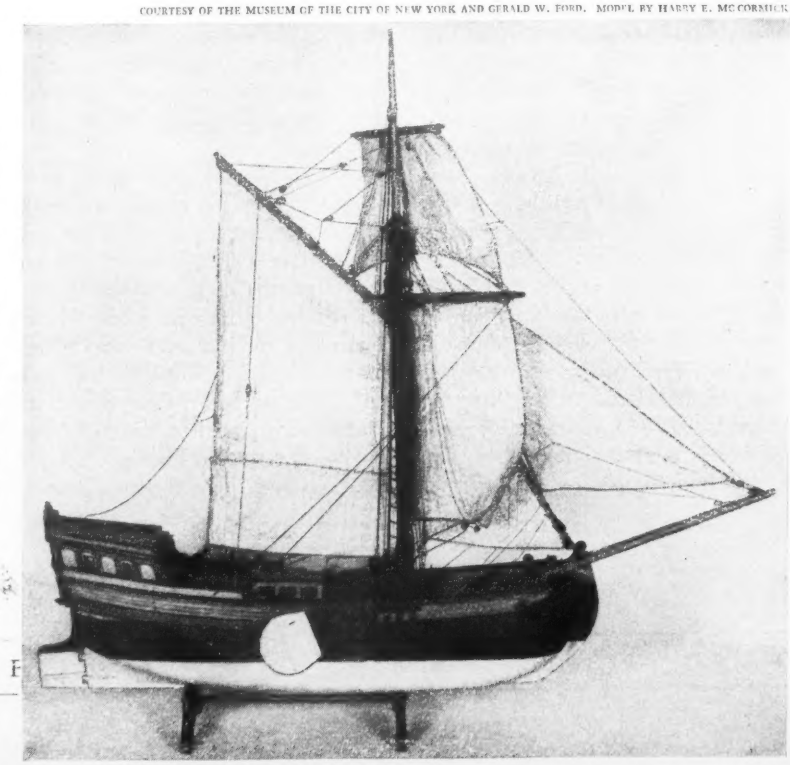
Thus from the outstart commerce with the Indians was imperative to the life of the colonists. No questions of financing were involved in these business dealings. It was primitive, age-old, simple trade.

This commerce grew to immense proportions, developing into the exchange of beads, hatchets, knives, muskets, ammunition, blankets, coats, biscuits, and most important of all, of wampum, for beaver, otter, mink, bear, raccoon, and fox furs and skins. Until 1646, beaver was the greatest single item of export to Europe. Later, fish, and then rum were to succeed furs as the most important single item of foreign commerce. Throughout the colonial era important staple items of export included timber and timber products, in the form of ships, masts, and spars for the British royal navy, barrel staves, pitch, tar, rosin, turpentine, potash, potatoes, tobacco, and rice.

The keynote of colonial economic history is found in the scarcity of metallic currency, and in the constant series

The Onrust, *jaght—This was the first boat built on Manhattan Island, and believed to be the first pleasure boat built in the United States. Adrian Block sailed this ship to the unsettled shores of Massachusetts Bay six years before the* Mayflower *anchored in Plimoth Harbor. In 1613 Block's boat, the* Tiger, *was destroyed by fire in Manhattan Harbor. Salvaging the fittings, rigging and sails, and part of her stores, the men constructed the* Onrust *on a sandy beach not far from the present site of Trinity Chuch, New York City.*

COURTESY OF THE MUSEUM OF THE CITY OF NEW YORK AND GERALD W. FORD. MODEL BY HARRY E. MCCORMICK.



of expedients and experiments by which the colonists attempted to solve this basic economic dilemma.

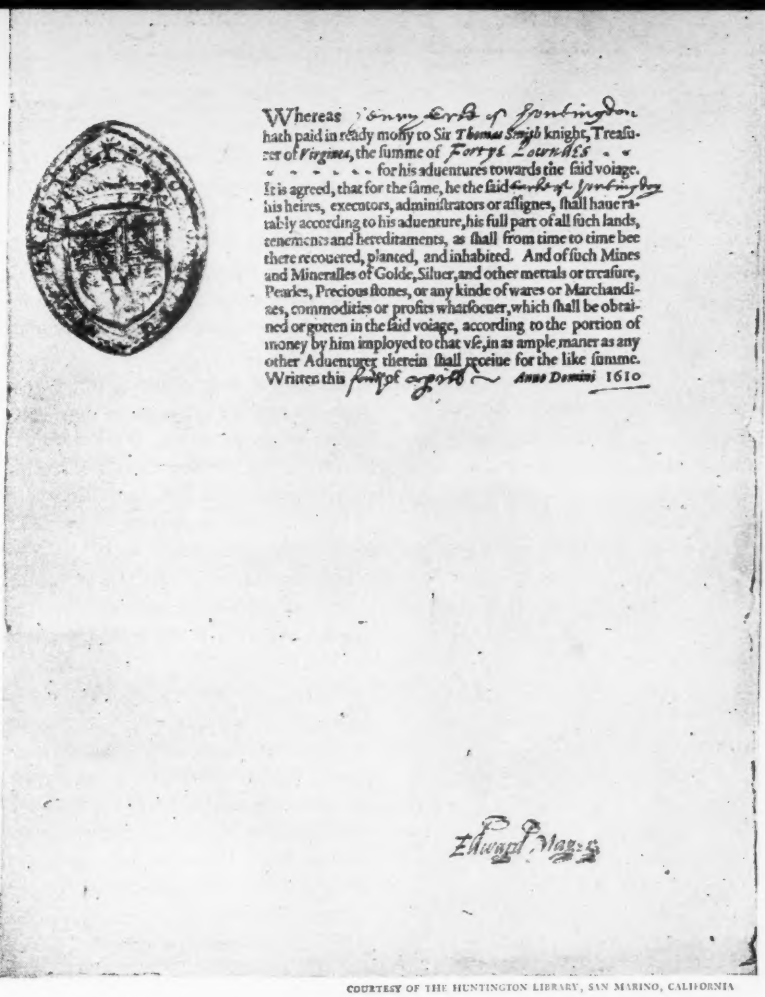
For the necessary supplies of manufactured equipment, implements, tools, merchandise, and goods, which colonists so greatly needed and constantly imported from Europe, furs, lumber, lumber products, tobacco, rice, and later, fish and rum had to be shipped in payment. These had to be provided by the actual labor of the colonists themselves.

Prime Medium of Exchange

To obtain furs, something in exchange had to be given to the Indians who trapped them and brought them to the trading posts. The most important article used in this early exchange was that native aboriginal jewelry, Indian wampum. That was cash 300 years ago, the prime absolute medium of exchange.

Wampum was black and white beads made from whorls of periwinkle shells in which holes were bored with stone drills, the beads then being strung on fibers of hemp, on tendons taken from the forest meat, or embroidered on pieces of deerskin to form girdles or belts as ornaments and charms. Each shell cylinder was about one-eighth of an inch in diameter, about twice as long. To bore these cylinders with a primitive stone drill was the work of a deft artisan, who must then polish them on stones. The enterprising Dutch were the first to appreciate the indigenous economic use of wampum as token money in their trade with the Indians on Long Island. Here, it is said, the finest wampum was produced.

Its height in real value was reached about 1646. It declined for three fundamental reasons. The price of beaver skins, with which it was so closely related, fell in England, lowering the value of wampum in the colonies. The white man, with imported steel drills, manufactured the beads more rapidly than the Indians, effecting an "overissue." Finally, counterfeiting began; the natural black beads were worth double the whites, and shrewd colonists dyed the white beads!



Whereas [illegible] hath paid in ready money to Sir *Thomas Smith* knight, Treasurer of *Virginea*, the summe of *Forty Pounds* . . . . . for his aduentures towards the said voiage. It is agreed, that for the same, he the said [illegible] his heires, executors, administrators or assignes, shall haue ratably according to his aduenture, his full part of all such lands, tenements and hereditaments, as shall from time to time bee there recouered, planted, and inhabited. And of such Mines and Mineralles of Golde, Siluer, and other mettals or treasure, Pearles, Precious stones, or any kinde of wares or Marchandizes, commodities or profits whatsoeuer, which shall be obtained or gotten in the said voiage, according to the portion of money by him imployed to that vse, in as ample maner as any other Aduenturer therein shall receiue for the like summe. Written this [illegible] of [illegible] *Anno Domini* 1610

COURTESY OF THE HUNTINGTON LIBRARY, SAN MARINO, CALIFORNIA

This "Bill of Adventure" acknowledges payment for a share interest in The London Company, and describes the contract. Men who travelled uncharted seas thousands of miles from home leaving relatives and friends behind were adventurers all right and were so called. For much the same reason so were the men who stayed at home but who "adventured" their money in a colonial expedition. The seventeenth century was an age of nice and delicate distinctions.

All New England colonies had withdrawn the legal tender quality from wampum by 1662. It circulated in smaller transactions and in the remote districts of New England as far south as the Potomac until the eighteenth century. Despite disadvantages, wampum was readily exchangeable for merchandise, labor, and taxes during most of 75 years. Frequently there was no other currency. It was the first widely used unit of credit and medium of trade in the colonies.

Other commodities also began to appear as media of exchange. In 1631 Massachusetts ordered that "corne shall pass for payment of all debts at the usual rate it is sold for, except money or beaver be expressly named." Colonies generally voted from year to year the rates at which certain specified products would be received into the public treasury in payment of taxes and thus an attempt was made to control prices.

Using commodities as money did not and could not determine their actual commercial values. The value of surplus produce was determined by foreign market conditions, and legislate as they would, the colonists could not maintain values on these commodities higher than they would bring when sold abroad, less transportation costs.

Few commodities were uniform in

quality and colonists would often settle taxes and other debts by payment with the poorer specimens. The commodities used as money were the staples used in each region. Most farmers raised them and so doing "operated mints." The temptation was too great not to put the poorer quality into circulation. In Southern colonies tobacco was the most important staple used as a substitute for the scarce metallic money, beginning about 1619 in Virginia. Like corn, wheat, and cattle in New England, tobacco fluctuated greatly in value; as its production increased, its value depreciated. Tobacco, moreover, was not a uniform product. Maryland in 1698 found it necessary to legislate against the fraud of packing trash in hogsheads which contained good tobacco only on the top, as did Virginia in 1705.

Significantly, in 1713 a Virginia tobacco act provided for a warehouse receipt. Planters could bring their tobacco to public warehouses to be tested, weighed, and stored. In exchange, they received tobacco certificates. These stated the amount and quality of tobacco deposited, and constituted a title. The last holder could remove and sell the tobacco covered by the note.

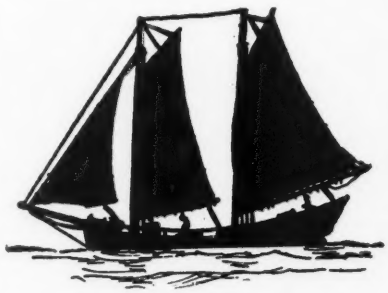
In South Carolina rice became the principal medium of exchange chiefly in the form of rice certificates, similar to the tobacco notes in Virginia.

All these commodities had fluctuating market values. Laws of most colonies, however, made them legal tender at a fixed rate. Invariably colonists valued these commodities for public payment at legal prices which were higher than prevailing market prices. Shortly after 1687 in South Carolina money prices of the commodities used as currencies were actually three times their sterling values.

Oats, bacon, dried fish, tallow, butter, cheese, sugar, brandy, whisky, and even musket balls were also used as money in colonial days.

Use of commodity money differed somewhat from simple barter insofar as the colonial assemblies passed laws providing that specified products would be received in payment of taxes and all other public debts. The enumerated commodities then served as actual money. They were paid by the colonies to their creditors; their use in all public transactions was compulsory. Consequently they differed in legal standing from all other commodities bartered in private trading transactions. There existed a sustained demand for commodity money commensurate with the fiscal needs of the colonial government. The individual would accept a designated product with the assurance that he would be able to dispose of it in the payment of taxes.

There were no gold or silver mines in the colonies. The only way for the colonists to obtain gold and silver specie was to import it in exchange for other commodities or to receive it in payment as carriers for English commerce on the seas.



"Heel Tapper," Fishing Schooner—*Courtesy of the Marine Research Society, Salem, Massachusetts, and Seamen's Church Institute of New York.*

For the most part the colonists could bring little or no money; what little they did sometimes bring was speedily sent back to England in payment for articles of luxury, necessary tools and supplies. Even when the balance of trade with England or with the West Indies was favorable to a particular trader, final settlement of the indebtedness was more likely to be in needed merchandise.

Massachusetts, New York, Virginia, and Maryland at one time or another forbade the exportation of coin. The Crown, however, stood staunchly in the way of such "left wing" legislation.

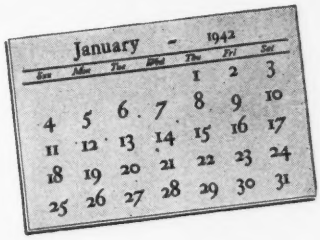
As the foreign commerce developed, trade increased with the many islands in the West Indies, Canary Islands, Madeira, Portugal, and with Spain which controlled the great silver mines in Mexico and Peru. Because of the very extensive trade between the West Indies and the Spanish Main, most of

(Continued on page 40)

This little sloop, believed to be the Experiment, *hardly more seaworthy than a harbor craft of today, made the first direct voyage from the United States to China, sailing from New York in December, 1785. She carried a crew of fifteen men and boys, and was commanded by Stewart Dean, plucky privateersman in the Revolution. She mounted six carriage guns and carried plenty of muskets, boarding-pikes and cutlasses, as pirates had to be reckoned with. The* Experiment *made a profitable voyage which took four months and twelve days without the loss of a man. She took out ginseng and brought back silk and tea.*

COURTESY OF THE MUSEUM OF THE CITY OF NEW YORK. MODEL BY ARCHIBALD R. LIVINGSTON

The Business Man's Diary



1 RETAIL sales of new automobiles and trucks banned until rationing established.

2 MANILA falls to Japanese invaders. . . . After production of approximately 200,000 units this month passenger car output will be suspended for the duration.

3 TOTAL consumption of wool restricted by 20 per cent in the first quarter.

5 AUTOMOBILE industry asked to increase its war production in 1942 from scheduled $2,500,000,000 to over $5,000,000,000.

6 PRESIDENT calls for production this year of 60,000 planes, 45,000 tanks, 8,000,000 deadweight shipping tons.

7 WAR budget includes expenditures of $56,000,000,000 in fiscal year 1943, at least $9,000,000,000 in new taxes. . . . Production of vacuum cleaners ordered reduced 25 to 40 per cent in first quarter. . . . Use of steel in vending machines cut 25 per cent in January, 50 per cent in February and thereafter.

8 ABOUT 60 per cent of distilling industry's capacity diverted to manufacture of industrial alcohol.

10 LEAD use prohibited in list of civilian manufactures, curtailed in more essential goods.

12 NATIONAL War Labor Board headed by William H. Davis given broad powers to adjust labor disputes. . . . Metals Reserve Company to pay higher price for any output of copper, lead, and zinc in excess of quotas fixed by WPB.

13 DONALD NELSON delegated full authority by the President to direct Nation's war production.

14 TANKER torpedoed 150 miles from New York City.

15 SECRETARY OF WAR announces Army will be more than doubled to reach a total of 3,600,000 by end of this year.

16 ARMY contracts placed with automobile plants since outbreak of war reach $3,500,000,000. . . . Allocation of raw sugar supplies to be supervised by OPM.

17 MARITIME COMMISSION announces contracts negotiated for 632 additional merchant ships costing over $1,000,000,000.

21 REORGANIZATION of war program administration scraps OPM, centralizes authority in War Production Board. . . . ICC grants railroads 10 per cent increase in passenger fares. . . . Machine tools put under October 1 price ceiling.

22 AUTOMOBILE industry given priority to complete reserve of replacement parts.

23 HOUSE votes $12,525,872,474, greatest single military appropriation in history, for 33,000 planes, airplane plant expansion. . . . Sweeping Government order reduces amount of crude rubber and latex available for manufacture of civilian goods by approximately 75 per cent. . . . All 21 American republics formally vote recommendations for break of diplomatic relations with Axis.

24 RADIO and phonograph makers ordered to cut output for civilian use by nearly one-half during next three months; industry asked to undertake $2,000,000,000 military production program.

26 ALUMINUM use prohibited in any manufacture except on war contracts and items specifically mentioned. . . . First AEF of the war lands in Northern Ireland.

27 LEON HENDERSON, price administrator, delegated full authority to ration goods sold at retail. . . . House passes new record appropriation bill carrying $19,977,965,475 for the Navy.

30 PRESIDENT signs Price Control Bill, providing for single administrator, licensing power, 110 per cent of parity for farm products.

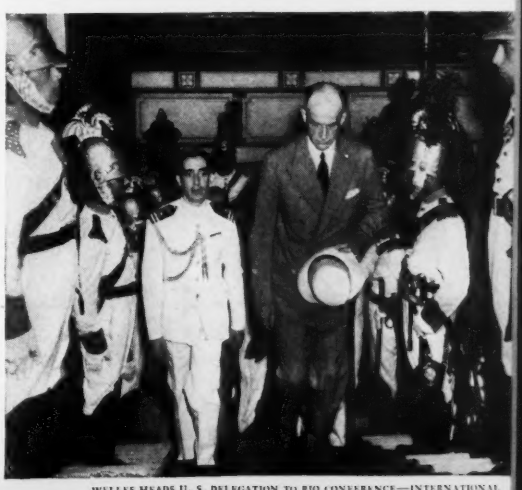
31 TREASURY outlays for defense total $2,100,754,425 in January. . . . Defense bond sales reach $1,060,547,000, more than double December total.

NAZI SUBS STRIKE AT ATLANTIC COAST SHIPPING—AIR FORCE, FROM ACME

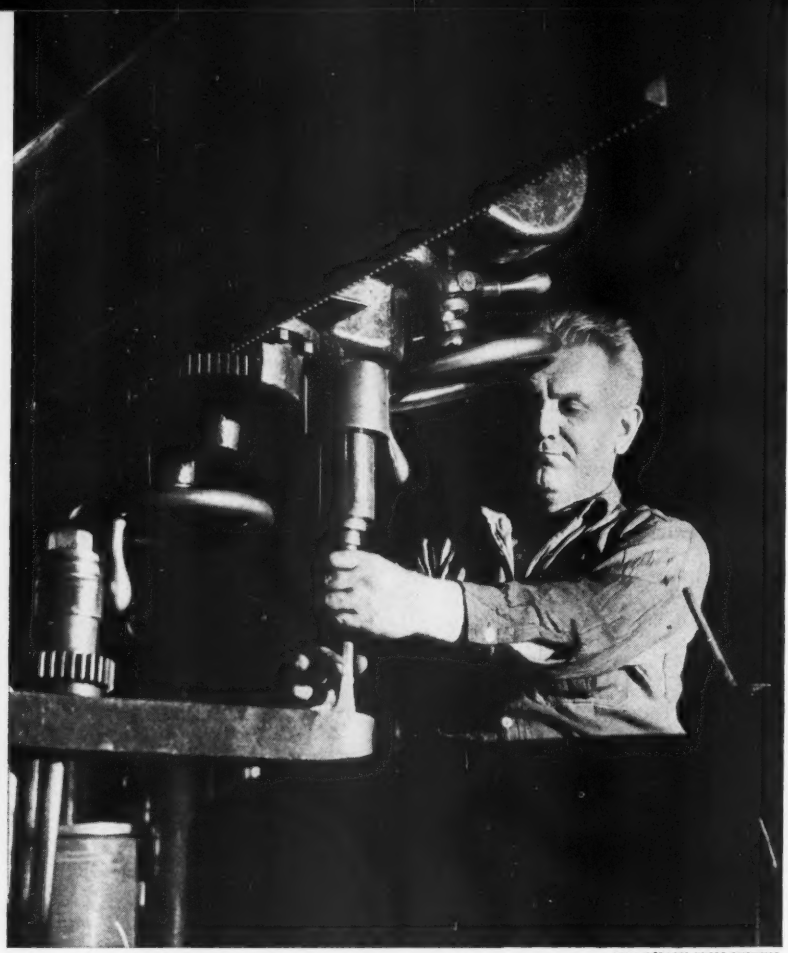
LAST GREAT 1942 PLYMOUTH
Our tanks and guns will be GREAT, too!
THEN WE'LL BUILD AGAIN MORE GREAT CARS
Plymouth Plant Employees

THE LAST PASSENGER CAR ROLLS OFF AUTOMOBILE ASSEMBLY LINES—ACME

CONVOYS MAINTAIN SUPPLY LINES TO PACIFIC WAR AREA—INTERNATIONAL



WELLES HEADS U. S. DELEGATION TO RIO CONFERENCE—INTERNATIONAL



PHOTOGRAPH FROM CUSHING

THE TREND OF BUSINESS

Military news sets the tempo for business activity. In February the most striking feature of industrial reports is the further quickening of the changeover to all-out war production. Fear of shortages, which in January set consumers off on a record buying spree, continues to govern both wholesale and retail demand. By mid-February, however, the rush of panic buying appears to have passed its peak. Prices are somewhat steadier after rising rapidly under scare demand.

ALL-OUT conversion to war had a new meaning for business this month. The speed with which industrial changes and Government controls were taking hold was overshadowed only by the rush of developments on the war front.

The automobile industry—the largest civilian industry in the durable goods category, accounting in the last Census year for over 450,000 employers and an annual product of $4,000,000,000—rolled the last of its passenger cars off assembly lines, preparatory to complete changeover to armament production. The radio industry, already cut by Government order to 60 per cent of last year's production, received notice that all facilities must be diverted to war goods within three months. Full conversion of the mechanical refrigerator industry was ordered by April 30.

Department Store Sales

Federal Reserve Board Adjusted Index
1923-1925 = 100

	1939	1940	1941	1942
January	88	92	101	138
February	88	90	103	
March	88	89	103	
April	88	89	104	
May	87	89	105	
June	86	91	104	
July	87	92	115	
August	88	98	134	
September	90	97	116	
October	92	94	105	
November	93	100	116	
December	95	101	111	

Typewriter production was to be reduced 20 to 25 per cent on standard models, 80 per cent on portables to facilitate changeover to output of small arms and ammunition.

Unemployment rolls were mounting in production centers for the affected consumers' goods lines. Detroit, one of the cities hardest hit, reported factory employment decreased by 70,000 at the end of last month compared with a year ago. Estimates of January unemployment by the Federal Works Agency showed 1,000,000 workers with job connections but not actually employed, against half that number in the previous month. Absorption of new workers by the war industries was proceeding so fast, however, that preliminary reports for January indicated no more than the usual seasonal decline in total factory employment.

Shortages and fear of shortages dominated all trade activity. Early in January consumers broke out suddenly into a buying spree which in scope and intensity surpassed last Summer's rush. Purchases stressed rubber and woolen goods, drugs, shoes, hosiery, food staples but stock-up demand was spread so widely that hardly any major line was unaffected. At the height of the panic trade, retailers sharply cut promotional activity, inaugurated informal

Industrial Production

Federal Reserve Board Adjusted Index
1935-1939 = 100

	1939	1940	1941	1942
January	101	122	140	170
February	101	116	144	
March	101	113	147	
April	97	112	144	
May	98	116	154	
June	103	122	159	
July	105	122	160	
August	106	124	160	
September	114	127	161	
October	120	130	163	
November	124	134	166	
December	125	139	168	

Factory Payrolls

U.S.B.L.S. Index
1923-1925 = 100

	1938	1939	1940	1941
January	75.4	84.7	99.8	120.7
February	77.7	87.1	99.3	120.8
March	77.8	88.8	99.8	131.2
April	75.2	86.8	97.9	134.7
May	73.6	86.3	97.8	144.1
June	71.6	87.9	99.5	152.2
July	71.7	85.8	98.2	152.7
August	77.9	91.2	105.5	158.1
September	82.3	95.4	111.6	162.6
October	85.0	103.2	116.2	166.8
November	85.3	103.2	116.4	165.2
December	88.1	105.4	122.4	169.8

rationing schemes to apportion slim stocks. By early February the retail trade had quieted somewhat but unusual demand persisted in a number of lines and at mid-month sales still showed exceptionally large gains over last year.

Spring wholesale markets, which had opened on a cautious note, caught the contagion of the consumers' buying fever. Retailers' buying budgets underwent upward revisions as record sales figures began to appear. Although market events were not uniformly active, sellers in great many instances reported that orders were more than they could accept. Trade inventories which had appeared overly substantial at the end of the Christmas season—independent retailers had reported an average inventory increase over the previous year of 30 per cent, wholesalers one of 29 per cent—dwindled rapidly under the unusual demand.

Rationing controls in the consumer market were hastened by the panic buying. More wholesale lines were reported selling on the basis of customers' past orders. Retailers voluntarily established rationing for some shortage lines. Strict rationing under Government control regulated distribution of automobiles and of new and retread tires. Retailers' sales of new refrigerators were restricted to one-twelfth the number sold in 1941. War Ration Book Number I was to limit every consumer to about half a pound of sugar per week.

Adding to the pressure on prices, the rush buying also speeded Government controls over prices. The Emergency Price Control Act of 1942 was approved by the President on January 30. On February 22, OPA issued its one-hundred-and-sixth price schedule. Wholesale prices, which had moved ahead sharply from early December to mid-January, were steadier in the next three weeks, but living costs in January showed the largest monthly gain since October.

Industrial activity: Production held unchanged in total, despite the dislocations imposed on industry by the accelerated shift to war production. Steadiness of activity in January when the trend is usually slightly downward raised the FRB seasonally adjusted index of production from 167 in December (revised) to an estimated 170 in January.

Reflecting the stepped-up arms production, Treasury outlays for the war reached a total of $2,100,754,425 in January, nearly $300,000,000 more than

Wholesale Commodity Prices

U.S.B.L.S. Index—1926 = 100

Week	Nov. 1941	Dec. 1941	Jan. 1942	Feb. 1942
I	91.6	92.2	94.3	95.7
II	91.7	93.1	95.0	
III	92.3	94.0	95.6	
IV	92.2	93.8	95.5	
V	92.3		95.9	

was spent in December. During the first half of February outlays were at a monthly rate of $2,400,000,000.

Consumer income: Longer working hours helped to account for a further increase in total factory payrolls as employment held practically unchanged. The USBLS index reached 173.2 in January, comparing with 170.2 in December and 120.7 in the previous year. Income from farm marketings declined from the exceptionally high December total, but the index of prices received by farmers advanced 6 points in January to 14.9 per cent of the 1910-1914 average.

In January the cost of living (NICB index) was 1.4 per cent higher than a month earlier, 10 per cent higher than in the previous year. The more rapid advance in retail prices tended to narrow the spread between retail and wholesale quotations; compared with the 19 per cent gain in wholesale prices over the previous year, however, the 10 per cent increase was still quite moderate.

Consumer spending: The smaller than usual decline in retail trade from peak Christmas levels sent seasonally adjusted indexes of sales to new record highs in January. At 138, the FRB index of department store sales contrasted with 101 in January a year ago. General trade gains were somewhat more moderate than those in department stores, but the Dun's Review index of consumer spending (pages 22-29) reached a new peak of 131.1, against 105.5 last year.

Banking and finance: Expanded business activity and an increase in public hoarding appeared in a strong, steady rise in currency circulation. By mid-February the Federal Reserve System reported that money in circulation had reached a record $11,339,000,000, or $2,651,000,000 more than volume outstanding a year ago.

While defense bond sales soared to a new high of $1,060,547,000 in January, a steady decline in time deposits suggested that sales to some extent were merely a transfer from bank to Government savings. For the week ended February 11, time deposits of reporting member banks were down to $5,197,000,000, or $255,000,000 below last year.

Stock market trading remained relatively dull. As the industrial average continued in a mild decline during February turnover on the New York Exchange dropped off to less than 8,000,000 shares.

Industrial Stock Prices

Dow-Jones Index (Weekly Average)

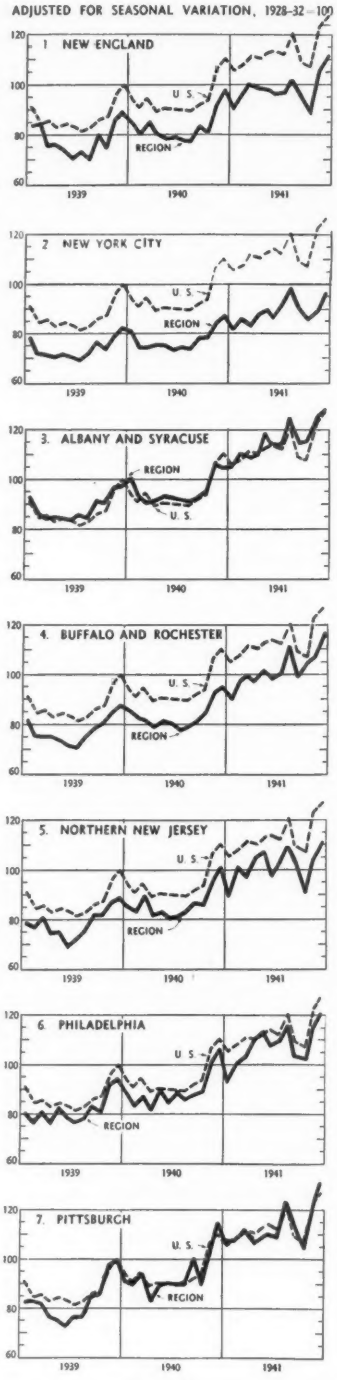
Week	Nov. 1941	Dec. 1941	Jan. 1942	Feb. 1942
I	118.92	115.82	111.27	109.96
II	118.83	110.50	112.40	107.08
III	116.42	109.28	111.70	
IV	116.48	106.82	109.63	
V	115.80		109.99	

THE REGIONAL TRADE BAROMETERS

Trends in consumer purchasing in the 29 barometer regions are summarized on the opposite page. Charts on this page and pages 26, 28, and 29 compare the index for each region with the index for the United States since 1939. The accompanying paragraphs give more recent detail about regional trade conditions.

Indexes may be obtained in advance of their publication in DUN'S REVIEW by arrangement with the editor. Additional information about the barometers and about their especial usefulness in regional sales quota work, back figures and data on regional boundaries are available for users of the indexes.

ADJUSTED FOR SEASONAL VARIATION, 1928-32=100



1. NEW ENGLAND

DEC., 112.1 NOV., 105.5 DEC. 1940, 98.1
UNADJUSTED: DEC., 138.1; NOV., 112.7

DECEMBER—Percentage retail trade increases over previous December: Bangor 5, Portland 30, Manchester–Springfield 20, Boston–New Bedford 10, Worcester 15, Providence 17, Hartford 23, New Haven 12. Sales in rural Vermont, New Hampshire slightly above 1940. Wholesale trade up 27%. Production at record, 20% above last year. Collections steady to better than 1940. JANUARY—Government ordered woolen output reduced to 80% of 1941 level. Unemployment increased in rubber, metal products plants affected by priorities; principal industries busy with war work. Department store sales 40% above 1941. War industries increased output, have large orders.

2. NEW YORK CITY

DEC., 96.2 NOV., 88.3 DEC. 1940, 87.7
UNADJUSTED: DEC., 107.7; NOV., 95.5

DECEMBER—Percentage retail trade increases over previous December: Bridgeport 10, New York City department store sales 7, hotel sales 7. Employment up 14% at retail from November, steady in factories. Industrial payrolls 32% above 1940, retail trade 6%, wholesale 8%. Collections steady to better than 1940. JANUARY—Department store sales up 30% from 1941; garment manufacturers' sales up 75% from December. Wholesale lamp show buying up 30% from last year; purchasing spotty at curtain, furniture shows. Small industries hit by material shortages. Long Island factory employment increasing.

3. ALBANY AND SYRACUSE

DEC., 128.7 NOV., 125.6 DEC. 1940, 105.3
UNADJUSTED: DEC., 141.7; NOV., 127.1

DECEMBER—Percentage retail trade increases over previous December: Albany 15, Binghamton 25, Utica 15, Syracuse 17. Syracuse wholesale trade up 8%. Milk production 8% above last year, prices up 27%. Larger working forces and longer hours in war plants boosted employment in month. Utica payrolls 66% above 1940, Albany–Schenectady–Troy 60%, Binghamton–Endicott–Johnson City 45%, Syracuse 44%. Collections steady to better than last year. JANUARY—Construction adds to Syracuse payrolls. Syracuse bank debits 17% above 1941, Utica 38%, Poughkeepsie 20%, Binghamton 12%. Order to curtail wool consumption hit carpet mills.

4. BUFFALO AND ROCHESTER

DEC., 116.4 NOV., 106.6 DEC. 1940, 95.1
UNADJUSTED: DEC., 128.4; NOV., 108.1

DECEMBER—Percentage retail trade increases over previous December: Buffalo 16, Elmira 25, Rochester 10. Buffalo wholesale trade up 12%. New York State farm income 40% above 1940 in November; cheese output up 22%. Lay-offs at steel and heating apparatus plants caused slight decline in Buffalo employment. Rochester employment gained. Buffalo payrolls 44% above 1940, Rochester 46%. Collections better than last year. JANUARY—Buffalo department store sales 50% above 1941, Rochester 40%. Steel mills operated at lowered rate of 90% of capacity. Elmira bank debits 35% above 1941, Jamestown 22%. Employment expanding.

5. NORTHERN NEW JERSEY

DEC., 111.7 NOV., 104.0 DEC. 1940, 100.8
UNADJUSTED: DEC., 134.7; NOV., 108.1

DECEMBER—Newark retail trade 13% above last December, increased 35% in month. Wholesale volume 10% above 1940, up 20% in month. Industrial employment about 20% above 1940 in Newark, Jersey City, and Paterson, 25% in Elizabeth, about steady in month. Production in New Brunswick 50 to 100% above 1940, aided by plant expansion and new industries. Collections steady to better than last year. JANUARY—Newark department store sales 35% above 1941. Paint production 5% below 1941. Paterson dyers' and printers' business slack. Bank debits 17% above 1941 in Newark, 16% in Northern New Jersey. Heavy industries exceptionally active.

6. PHILADELPHIA

DEC., 120.1 NOV., 114.9 DEC. 1940, 106.3
UNADJUSTED: DEC., 159.7; NOV., 118.8

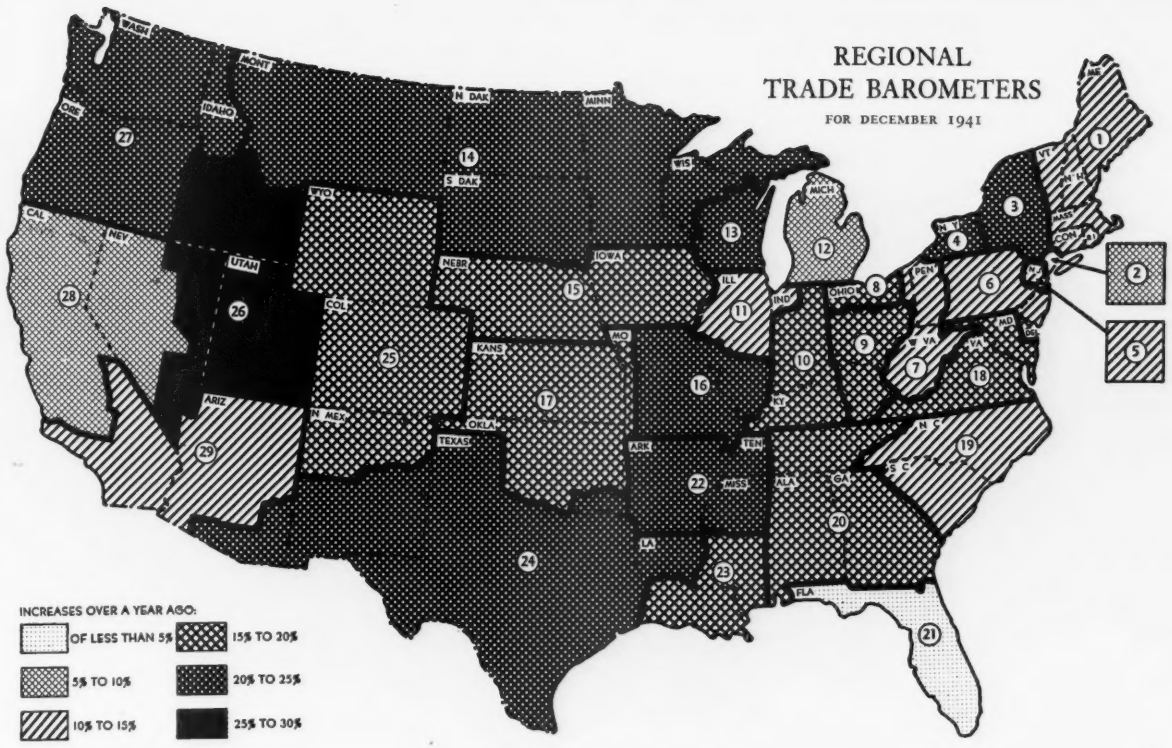
DECEMBER—Percentage retail trade increases over previous December: Trenton 13, Allentown–Lancaster 20, Philadelphia 12, Reading–Wilkes-Barre 15, Williamsport–Harrisburg–Wilmington 5, York 18, Scranton 8. Philadelphia wholesale trade up 5%. Payrolls and production generally increased in month, off in Trenton. Anthracite coal output 13% below last year. Collections steady to better than 1940. JANUARY—Philadelphia retail trade 35 to 40% above 1941. New plant to be built at Geneva will employ 2,000. Scranton bank debits 15% above 1941, Trenton 16%. Output curtailed in Trenton metal and rubber goods plants. Shipyards accelerating.

7. PITTSBURGH

DEC., 130.7 NOV., 124.2 DEC. 1940, 115.2
UNADJUSTED: DEC., 166.4; NOV., 125.1

DECEMBER—Percentage retail trade increases over previous December: Erie 25, Pittsburgh 9, Youngstown–Huntington 10, Charleston 20. Wholesale trade increases: Erie 15, Pittsburgh 12, Charleston 20. Payrolls and production steady to up in month. Major industries at practical capacity; iron and steel output 5% above 1940, soft coal up 13%; polished plate glass off 22%. Collections steady with last year. JANUARY—Youngstown steel output fell below 90% of capacity due to scrap shortage. Pittsburgh department store sales 50% above 1940, bank debits up 33% in Erie, 21% in Charleston; about same in Pittsburgh.

(Continued directly opposite)



BUYING SLACKENS AFTER RECORD JANUARY

The United States Trade Barometer advanced to an all-time high of 131.1 in January from 127.2 in December. Barometer figures are compiled by L. D. H. Weld, Director of Research, McCann-Erickson, Inc., trade information is reported by the branch offices of DUN & BRADSTREET, INC.

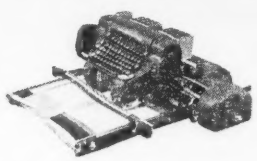
A MODERATE reaction from the exceptionally heavy retail buying in January was evident by mid-February as anticipatory purchasing eased in most lines. Spending continued at remarkably high levels however and sales were about 15 to 20 per cent larger than last year, although the substantial improvement in volume was traceable largely to price rises rather than increased unit sales.

Vigorous forward buying shortened the usual post-Christmas decline in trade and maintained dollar volume at record-breaking levels in January. Despite the spottiness in trade gains which reflected the highly selective purchasing, consumer buying generally was 24 per cent greater than 1941, according to the seasonally adjusted U. S. Trade Barometer which advanced to 131.1 from 127.2 in December.

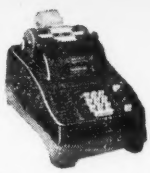
Touched off by the initiation of war-time controls which threatened "buying-as-usual" in some lines of merchandise, purchasing rapidly reached unprecedented levels to anticipate rationing, shortages, price rises, and changes in quality. While buying strongly resembled the rush market of last August and September, the current wave of stocking-up was even more persistent and widespread. Sugar, textiles, woolen clothing, rubber goods, shoes, radios, soap, metal notions, canned and dry groceries were bought in such quantities that retailers instituted informal rationing schemes to limit purchasing in some lines.

In sections particularly affected by the war effort trade changes from last year in January and early February varied widely from the average. In Florida, where the resort season has fallen below last year, and in other sections changing over from civilian to defense production gains tended to run below average, while trade boomed in cities and small towns confronted with a tremendous influx of war work.

Just HOW *important are typewriters these days? Sometimes Underwoods are installed and in operation before a new working force gets its desks and chairs. In many an office hard at work on contracts for urgently needed war materials, Underwood Typewriters are helping the staff keep pace with the constantly quickening industrial tempo.*

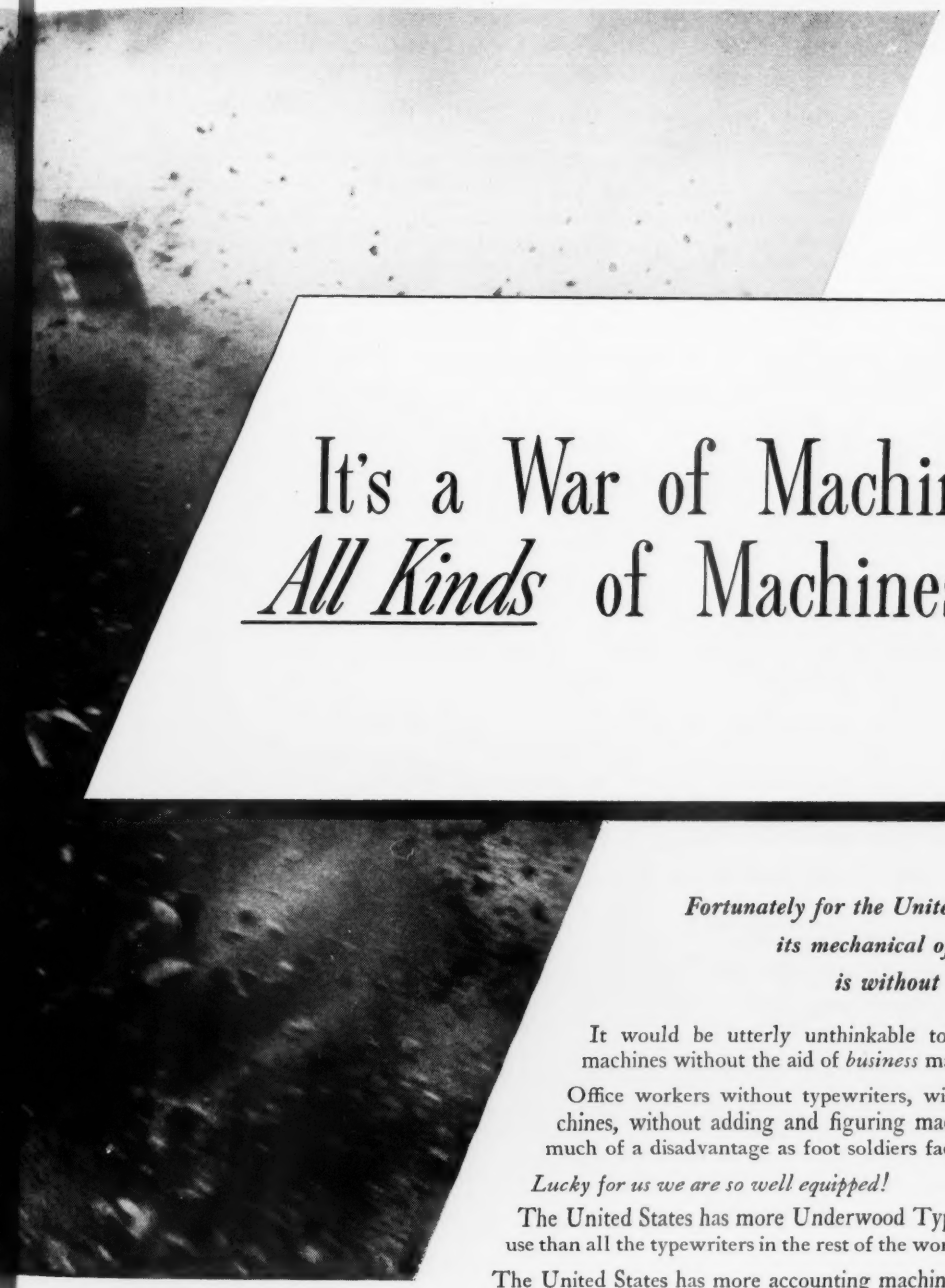


With billions of extra dollars for war materials going into circulation, accounts receivable and accounts payable grow and grow. Ledger postings hit new highs week after week. Bills and orders multiply. And so do all the jobs that make accountants thankful for Underwood Elliott Fisher Accounting Machines.



War today is more and more a matter of engineering and engineering lives on figures . . . on the kind of calculations that the Underwood Sundstrand Adding-Figuring Machine provides so easily and swiftly.

Underwood Elliott Fisher—



It's a War of Machines *All Kinds* of Machines

Fortunately for the United States
its mechanical office equipment
is without equal the world over

It would be utterly unthinkable to attempt to make *war* machines without the aid of *business* machines.

Office workers without typewriters, without accounting machines, without adding and figuring machines, are at just as much of a disadvantage as foot soldiers facing tanks.

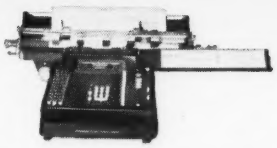
Lucky for us we are so well equipped!

The United States has more Underwood Typewriters in daily use than all the typewriters in the rest of the world put together.

The United States has more accounting machines in daily use than all the accounting machines in all the rest of the world put together.

The United States has more adding machines in daily use than all the adding machines in the rest of the world put together.

In the war of machines this is one of the points where this country STARTS *with an advantage.*



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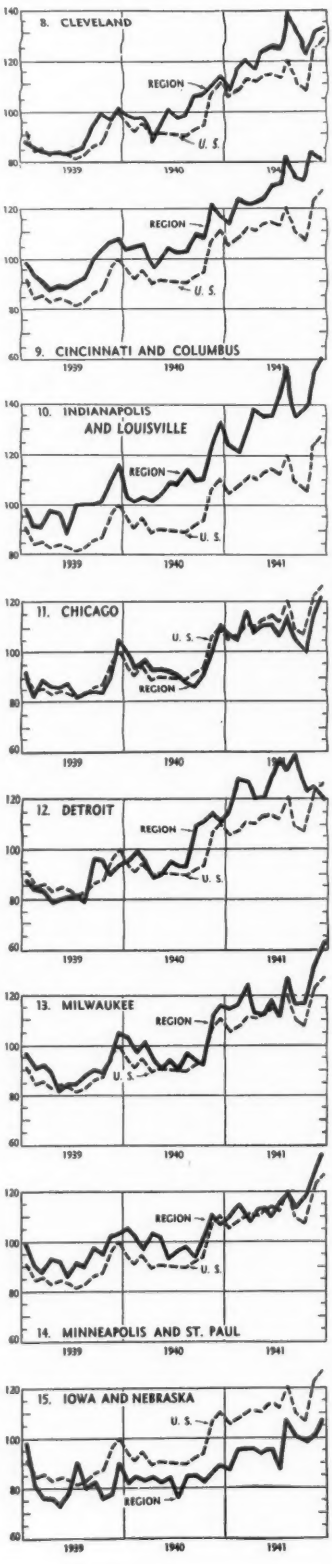
Use Underwood Elliott Fisher supplies for top office machine performance . . . typewriter ribbons, carbon papers, etc.

Speeds the Nation's Victory!

ADJUSTED FOR SEASONAL VARIATION; 1928-32=100



8. Cleveland

DEC., 132.6 NOV., 130.1 DEC. 1940, 113.4
UNADJUSTED: DEC., 179.0; NOV., 139.2

DECEMBER—Percentage retail trade increases over previous December: Cleveland 14, Akron 22, Canton 21, *Toledo 15, Lima 20. Wholesale trade* increases: Cleveland 26, Akron 11, Toledo 27. *Payrolls and production well above last year,* steady to lower than November. Curtailment in consumer durable goods industries such as automobiles, metal products, as well as retooling in rubber factories slowed activity. Collections generally better than 1940. JANUARY—Akron department store sales 55% higher than 1941, Cleveland *up 47%; Toledo retail trade up 25 to 35%. In*creasing priorities unemployment offset by gains *in other industries.*

9. Cincinnati and Columbus

DEC., 139.2 NOV., 142.7 DEC. 1940, *116.8*
UNADJUSTED: DEC., 189.3; NOV., 152.7
October, 1941 revision: Adj. 130.0; Unadj. 127.4

DECEMBER—Percentage retail trade increases over *previous* December: Cincinnati–Dayton 15, Springfield 20, Columbus 10, Zanesville 5. Wholesale trade increases: Cincinnati 15, Columbus 10. Large trade gains in tobacco-growing sections. Cincinnati payrolls 45% above 1940, Columbus 46%, Dayton 34%. *Production steady* to up in month. Collections vary in month, often *poorer in retailing.* JANUARY—Department store sales 47% above 1941 in Columbus, 40% in Cincinnati. Dayton bank debits 28% above 1941, Lexington 27%, Springfield 19%, Zanesville 20%, Middletown 31%.

10. Indianapolis and Louisville

DEC., 158.0 NOV., 152.1 DEC. 1940, 131.8
UNADJUSTED: DEC., 197.8; NOV., 153.5

DECEMBER—Percentage retail trade increases over previous December: Louisville 15, Evansville 5, Indianapolis 16, Terre Haute 10, Fort Wayne 25. Indianapolis wholesale trade up 20%. Employment about steady in month, off in Evansville, Elkhart, Aurora, Lawrenceburg, Terre Haute; generally well above a year ago, off 12% in Evansville. Collections usually steady with last year. JANUARY—Indianapolis department store sales 40% above 1941, Louisville 32%. Indianapolis non-war manufacturing reduced from last month. Louisville heavy industry has large order backlog. Fort Wayne bank debits 28% above 1941, Terre Haute 26%, Owensboro 40%.

11. Chicago

DEC., 122.6 NOV., 114.4 DEC. 1940, 110.9
UNADJUSTED: DEC., 153.0; NOV., 115.9

DECEMBER—Percentage retail trade increases over previous December: Chicago 9, Rockford 30, Peoria 10, South Bend 28, Springfield 20. Chicago wholesale trade up 6%. Illinois factory payrolls advanced to new high, 37% above 1940. Value of Chicago livestock slaughter in 1941 29% above 1940. Collections steady to better than last year. JANUARY—Chicago department store sales 29% above 1941. Wholesale shoe and housefurnishings market sales below last year, Spring apparel show dollar volume 25% higher. Decatur bank debits 41% above 1941, Peoria 35%, Elgin 9%, Rockford 31%, South Bend 21%, Gary 24%.

12. Detroit

DEC., 119.9 NOV., 124.8 DEC. 1940, 111.5
UNADJUSTED: DEC., 163.1; NOV.,138.5

DECEMBER —Percentage retail trade increases over previous December: Detroit 12, Grand Rapids 8, Saginaw 18. Wholesale trade increases: Detroit 20, Grand Rapids 5. Michigan farm income in November 54% above 1940. Factory employment 5% below 1940, payrolls 14% higher; employment and payrolls off 7% in month. Collections steady to better than 1940. JANUARY—Employment increased, still below 1941, as automobile factories temporarily expanded output before change-over in February. Steel mill output reduced to 96% of capacity. Detroit department store sales 38% above 1941. Grand Rapids Furniture Show attendance 20% below last year.

13. Milwaukee

DEC., 141.7 NOV., 130.9 DEC. 1940, 116.0
UNADJUSTED: DEC., 174.3; NOV.,135.7

October, 1941 revision: Adj. 116.9; Unadj. 120.3
DECEMBER—Percentage retail trade increases over previous December: Milwaukee 16, Madison 10, Green Bay 17. Milwaukee wholesale trade up 25%. Wisconsin farm income in November 63% above 1940. Egg, milk production above normal. Payrolls and production much better than 1940, steady in month. Wisconsin nonagricultural employment 10% above 1940. Collections steady to better than last year. JANUARY —Leading Milwaukee factories working at very high level of activity; Milwaukee department store sales 36% above 1941, bank debits up 22%; Green Bay bank debits up 30%, Manitowoc 19%.

14. Minneapolis and St. Paul

DEC., 134.0 NOV., 127.9 DEC. 1940, 107.5
UNADJUSTED: DEC., 141.5; NOV., 127.1

DECEMBER—Percentage retail trade increases over previous December: Duluth 10, Minneapolis–Fargo–Great Falls 8, St. Paul 13, La Crosse 12, Sioux Falls 17, Butte 6; Billings off 3. Wholesale trade increases: Duluth–Minneapolis 8, Great Falls 5. November farm income 57% above 1940 in Minnesota, 104% in Montana, 197% in North Dakota, 18% in South Dakota. Payrolls and production above 1940, steady to up in month. Butte miners on 6-day week. Collections steady to better than 1940. JANUARY—Department store sales 30% above last year in region. About 2,000 left Great Falls in 1941 for defense jobs. Priorities unemployment has affected 1,500 in La Crosse.

15. Iowa and Nebraska

DEC., 106.8 NOV., 100.0 DEC. 1940, 89.4
UNADJUSTED: DEC.,124.2; NOV., 109.7

DECEMBER—Percentage retail trade increases over previous December: Burlington 34, Cedar Rapids 11, Davenport–Dubuque–Sioux City–Omaha 15, Waterloo 10, Lincoln 5. Wholesale trade increases: Sioux City 0, Des Moines 10, Omaha 15. November farm income 32% above 1940 in Iowa, 12% in Nebraska. Payrolls and production generally above last year, below in Davenport and Dubuque due to curtailment in metal supplies. Collections steady to better than 1940. JANUARY —Nebraska department store sales 30% above 1941. Bank debits in Omaha up 30%, Lincoln 8%, Cedar Rapids 38%, Davenport 18%, Des Moines 22%, Dubuque 26%, Waterloo 29%.

As measured by the trade barometers for twenty-nine regions now available for December, the smallest gains from last year reflected the impact of the war effort on Florida's tourist traffic and Detroit automobile production. These regions were also two of the five which failed to meet seasonal expectations. The others were Portland and Seattle, Cincinnati and Columbus, and San Francisco. Most regions reported trade ahead of seasonal expectations; the Kansas City, New York City, and Buffalo and Rochester seasonally adjusted indexes made the widest gains.

In all but eight regions located mainly in the Middle Atlantic section Christmas buying broke all previous records. Those eight areas were: New England, Buffalo and Rochester, New York City, Northern New Jersey, Philadelphia, Chicago, Detroit, and San Francisco.

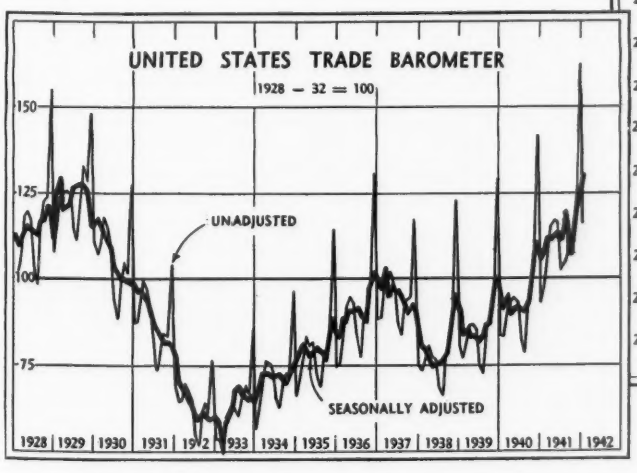
Eighteen regions, including the entire Southwest and Northwest as well as most of the South and Middle West, reported larger gains over last year than the country-wide increase of 15 per cent in December. The Salt Lake City, Memphis, and Minneapolis and St. Paul regions ranked first with gains of 25 per cent. The Milwaukee, Albany and Syracuse, and Buffalo and Rochester regions followed closely with gains of 22 per cent over 1940.

(Charts and trade reports for each region begin on page 22)

THE MAP AND CHART compare the December, 1941, indexes with those for the same month a year ago. The column at the extreme right of the chart indicates the relative importance of the regions: the figures are percentages of national retail trade from the 1935 Census of Business.

THE INDEXES for the regions are charted, with U. S., from 1939, on pages 22, 26, 28, 29. Each index is separately adjusted for seasonal variation and for the number of business days in each month. All are comparable. The average for 1928-1932 equals 100. The preliminary figure for the United States is available one month before the regional figures.

THE PARAGRAPHS which are printed opposite the twenty-nine regional charts give figures for the months of December and January based upon the opinions and comments of business men in various lines of trade, gathered and weighed by the local DUN & BRADSTREET offices; department store sales figures and bank debits are reported by the Federal Reserve banks. Estimates of future employment changes are from Government sources.



REGIONAL TRADE BAROMETERS

Region	Dec. 1941 Regional Index	Dec. 1941 Compared with Dec. 1940 (%)	Retail 1935 Sales %
U. S.	127.2	+15.1	100.0
1. NEW ENGLAND	112.1	+14.3	7.8
2. NEW YORK CITY	96.2	+9.7	0.3
3. ALBANY AND SYRACUSE	128.7	+22.2	2.5
4. BUFFALO AND ROCHESTER	116.4	+22.4	1.9
5. NORTHERN NEW JERSEY	111.7	+10.8	2.9
6. PHILADELPHIA	120.1	+13.0	6.2
7. PITTSBURGH	130.7	+13.5	3.7
8. CLEVELAND	132.6	+16.9	2.9
9. CINCINNATI AND COLUMBUS	139.2	+19.2	3.1
10. INDIANAPOLIS AND LOUISVILLE	158.0	+19.9	2.6
11. CHICAGO	122.6	+10.6	6.4
12. DETROIT	119.9	+7.5	4.0
13. MILWAUKEE	141.7	+22.2	2.2
14. MINNEAPOLIS AND ST. PAUL	134.0	+24.7	4.5
15. IOWA AND NEBRASKA	106.0	+19.5	3.0
16. ST. LOUIS	130.9	+21.0	2.5
17. KANSAS CITY	131.8	+20.0	3.6
18. MARYLAND AND VIRGINIA	156.6	+18.7	3.8
19. NORTH AND SOUTH CAROLINA	156.6	+11.5	2.1
20. ATLANTA AND BIRMINGHAM	182.7	+19.4	3.5
21. FLORIDA	160.8	+2.8	1.3
22. MEMPHIS	160.5	+24.5	1.5
23. NEW ORLEANS	141.8	+17.4	1.0
24. TEXAS	158.4	+21.3	4.5
25. DENVER	132.7	+15.4	1.3
26. SALT LAKE CITY	132.8	+25.3	.8
27. PORTLAND AND SEATTLE	135.1	+21.4	2.7
28. SAN FRANCISCO	115.8	+7.9	3.4
29. LOS ANGELES	121.6	+13.6	3.9

16. St. Louis

DEC., 130.9 NOV., 122.9 DEC. 1940, 108.2
UNADJUSTED: DEC., 157.2; NOV., 121.1

DECEMBER—Percentage retail trade increases over previous December: St. Louis 20, Springfield 13, Quincy 16. St. Louis wholesale trade up 10%. Missouri farm income in November 36% above 1940. Payrolls and production well above last year, steady to higher in month. Many St. Louis defense plants increased work-week to seven days. Collections steady to better than 1940. JANUARY—St. Louis department store sales 42% above 1941; concerns hurt by priorities endeavoring to obtain war work. Bank debits 24% above last year in St. Louis, 17% in Springfield, 31% in Sedalia. Steel mills reduced operations to about 89% of capacity.

18. Maryland and Virginia

DEC., 156.6 NOV., 154.5 DEC. 1940, 131.9
UNADJUSTED: DEC., 210.8; NOV., 166.1

DECEMBER—Percentage retail trade increases over previous December: Baltimore 13, Washington–Richmond 12, Norfolk 30, Lynchburg 20, Bristol 5. Wholesale trade increases: Baltimore 5, Norfolk 20, Richmond 10. November farm income 46% above 1940 in Maryland, 36% in Virginia. Payrolls and production well above 1940, steady in month. Collections steady to better than 1940. JANUARY—Industrial activity stepped up. Baltimore department store sales 40% above 1941; Washington bank debits up 29%, Richmond 22%, Norfolk 26%, Roanoke 9%, Lynchburg 14%, Baltimore 28%, Cumberland 29%, Hagerstown 35%, Newport News 21%, Danville 46%.

20. Atlanta and Birmingham

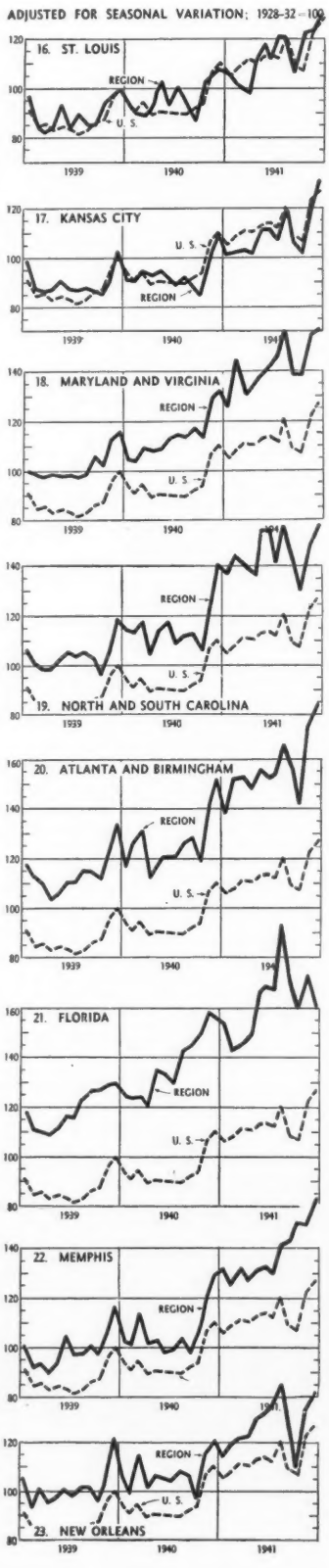
DEC., 182.7 NOV., 174.6 DEC. 1940, 153.0
UNADJUSTED: DEC., 230.6; NOV., 181.8

DECEMBER—Percentage retail trade increases over previous December: Atlanta 10, Augusta–Macon 20, Columbus 18, Birmingham–Mobile–Nashville 15, Montgomery 14, Chattanooga 8, Knoxville 18, Nashville 15; Savannah off 5. Wholesale trade increases: Atlanta 40, Birmingham 17, Nashville 10. Georgia industrial payrolls 27% above 1940, Tennessee 53%, Alabama 35%. Collections steady to better than last year. JANUARY—Mobile shipyards expanding, employing more than 10,000. Atlanta department store sales 21% above 1941, Nashville 22%, Birmingham 71%; Mobile bank debits up 48%, Savannah 21%, Montgomery 37%, Columbus 23%.

22. Memphis

DEC., 160.5 NOV., 149.5 DEC. 1940, 128.9
UNADJUSTED: DEC., 206.2; NOV., 170.3

DECEMBER—Percentage retail trade increases over previous December: Memphis–Little Rock 15, Fort Smith 26. Memphis wholesale trade up 15%. Arkansas farm income 43% above 1940 in November. Non-agricultural employment up 17% from last year, up 12% from November. Construction near Fort Smith nearing completion; major manufacturers running full time. Collections steady to better than last year. JANUARY—Memphis department store sales 35% above 1941, Little Rock 19%. Memphis bank debits up 32% from last year, Fort Smith 30%, Little Rock 12%, Pine Bluff 37%, Texarkana 200%, Helena 6%, El Dorado 27%.



17. Kansas City

DEC., 131.8 NOV., 118.2 DEC. 1940, 109.8
UNADJUSTED: DEC., 167.5; NOV., 123.8

DECEMBER—Percentage retail trade increases over previous December: Kansas City 12, St. Joseph 2, Topeka 9, Wichita 25, Oklahoma City 10, Tulsa 25. Wholesale trade increases: Kansas City–Oklahoma 10. November farm income up 29% from 1940 in Oklahoma, 34% in Kansas. Payrolls substantially higher than last year, production of lead up 46%, zinc 20%, Kansas oil up 31%, Oklahoma oil off 1%. Collections vary. JANUARY—Department store sales in Kansas City 42% above 1941, Tulsa 35%, St. Joseph 51%, Oklahoma City 15%, Wichita 50%. Payrolls up in month. Alcohol factory reopening in Atchison.

19. North and South Carolina

DEC., 156.6 NOV., 148.5 DEC. 1940, 140.5
UNADJUSTED: DEC., 213.4; NOV., 161.4

DECEMBER—Percentage retail trade increases over previous December: Asheville–Greenville–Greensboro 20, Winston-Salem–Raleigh 5, Charlotte 17, Wilmington 25, Charleston 30, Columbia 10. Wholesale trade increases: Wilmington 20, Charleston 10, Winston-Salem 10. November farm income 16% above 1940 in North Carolina, 30% below in South Carolina. Payrolls and production well above 1940. Collections steady to better than 1940. JANUARY—High Point furniture, rug market attendance 10% below 1941. Charlotte bank debits 14% above 1941, Durham 32%, Greensboro 15%, Raleigh 12%, Winston-Salem 28%, Columbia 17%, Spartanburg 5%.

21. Florida

DEC., 160.8 NOV., 172.9 DEC. 1940, 156.4
UNADJUSTED: DEC., 229.6; NOV., 167.4

DECEMBER—Percentage retail trade changes from previous December: Jacksonville +12, Tampa +9, Miami —5. Wholesale trade increases: Jacksonville–Tampa 10. Citrus fruits moving steadily, vegetable movement heavy; season to date slightly better than last year. November farm income 4% above 1940. Industrial payrolls 15% above 1940, increased in month. Collections steady to better than a year ago. JANUARY—Tourist season considerably below last year. Truck shipments greatly reduced due to heavy rains which caused extensive replanting in some areas. Pensacola bank debits 38% above 1941, Tampa 23%; Miami and Jacksonville slightly below 1941.

23. New Orleans

DEC., 141.8 NOV., 133.1 DEC. 1940, 120.8
UNADJUSTED: DEC.,183.6; NOV., 141.9

DECEMBER—Percentage retail trade increases over previous December: New Orleans 20, Jackson 9; New Orleans wholesale trade up 25%. Farm income in November 45 to 50% higher than 1940. Industrial payrolls up 42% over 1940 in Louisiana, up 58% in Mississippi, increased substantially in month. Grinding of sugar cane completed. New oil wells brought in in several fields. Collections steady with last year and last month. JANUARY—Construction continues to stimulate trade. New Orleans bank debits 26% above 1941, Jackson 33%, Meridian 35%, Vicksburg 39%; Hattiesburg slightly below last year. Oil output increasing, 27% above year ago.

24. Texas

DEC., 158.4 NOV., 150.2* DEC. 1940, 130.6
*UNADJUSTED: DEC., 209.6; NOV., 162.1**

DECEMBER—Percentage retail trade increases over previous December: Dallas–Fort Worth–Wichita Falls–Houston–Beaumont 15, Amarillo–Lubbock–Shreveport 20, Houston 15, Galveston 10, Waco 3, San Antonio 21, Austin 4; El Paso off 12. Wholesale trade increases: Dallas 20, Houston 2, San Antonio 14, Fort Worth 35, Shreveport 15. November farm income 35% above 1940. Industrial payrolls up in month, 30% above 1940. Collections steady to better than 1940. JANUARY—Dallas department store sales 18% above a year ago, Fort Worth 37%, Houston 30%. New Fort Worth plant to cost $14,000,000. Oil output 15% above last year. Citrus crop larger than 1941.
*Revised.

26. Salt Lake City

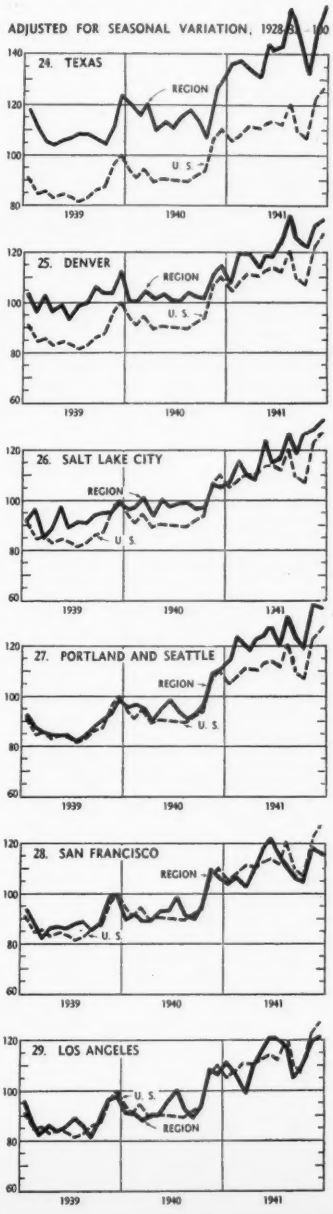
DEC., 132.8 NOV., 128.2 DEC. 1940, 106.0
UNADJUSTED: DEC., 184.9; NOV., 135.3

DECEMBER—Percentage retail trade increases over previous December: Salt Lake City 19, Boise 16. Salt Lake City wholesale trade up 20% over 1940, 8% over November. Farm income 56% above last year in Utah, 60% in Idaho. Payrolls and production substantially higher than 1940; non-agricultural employment up 9%. Mining, construction very active. Increased defense production more than offset declines in non-defense activity. Collections better than last year. JANUARY—Salt Lake City department store sales 43% above 1941; bank debits up 29% in Salt Lake City, 17% in Boise, 49% in Ogden. Mining activity increased near Las Vegas.

28. San Francisco

DEC., 115.8 NOV., 118.4 DEC. 1940, 107.3
UNADJUSTED: DEC., 153.3; NOV., 119.2

DECEMBER—Percentage retail trade increases over previous December: Oakland–Fresno 5, Sacramento 10; San Francisco off 1. San Francisco wholesale trade up 35%. Orange marketings about two-thirds complete. Condition of crop slightly below last year. Payrolls and production generally higher than last year, smaller gains in Sacramento and Fresno. Collections generally steady with last year. JANUARY—Major industrial plants increased activity. Dollar volume above last year at San Francisco wholesale apparel market week. San Francisco bank debits 16% above 1941, Fresno 25%, Sacramento 14%, Stockton 19%, San Jose 30%.



25. Denver

DEC., 132.7 NOV., 131.0 DEC. 1940, 115.0
UNADJUSTED: DEC., 169.5; NOV., 137.4

DECEMBER—Percentage retail trade increases over previous December: Denver–Albuquerque 10. Albuquerque wholesale trade up 15% from a year ago. Colorado fruit and vegetable shipments 22% larger than 1940. November farm income up 40% from last year in Colorado, 51% in Wyoming. Cattle and sheep wintering well. Non-agricultural employment 11% greater than 1940 in Colorado, 5% in Wyoming. Collections steady to better than 1940. JANUARY—Denver department store sales 29% above 1941; wholesale market week up 15 to 25%. Bank debits up 20% from 1941 in Colorado Springs, 22% in Denver, 23% in Pueblo, 21% in Albuquerque, 19% in Cheyenne.

27. Portland and Seattle

DEC., 135.1 NOV., 136.9 DEC. 1940, 111.3
UNADJUSTED: DEC., 173.6; NOV., 134.2

DECEMBER—Percentage retail trade increases over previous December: Seattle 22, Tacoma 8, Spokane 5, Portland 25. Wholesale trade increases: Seattle 25, Portland 20. Payrolls and production much better than last year, steady to up in month. Non-agricultural employment 15% above 1940. Lumber sales increased; production off seasonally. Collections better than 1940. JANUARY—Department store sales in Portland 34% above 1941, in Seattle 56%. Lumber orders continue to increase. Bank debits 30% above 1941 in Spokane, Tacoma, Yakima, and Salem, 18% in Walla Walla. Heavy industry and construction are exceptionally active.

29. Los Angeles

DEC., 121.6 NOV., 119.6 DEC. 1940, 107.0
UNADJUSTED: DEC., 153.3; NOV., 117.4

DECEMBER—Percentage retail trade increases over previous December: Los Angeles 8, San Diego–Phoenix 20. Los Angeles wholesale trade up 32%. Condition of orange, grapefruit crops better than last year. Payrolls and production much larger than last year, up in month. Copper miners get 25c.-a-day wage increase; production begun at sizable new mine. Collections steady to better than 1940. JANUARY—Phoenix bank debits up 34%, San Diego 75%, Pasadena 6%, San Bernardino 24%, Los Angeles 25% from the like period a year ago. Los Angeles Spring Fashion Market sales well ahead of 1941; furniture show volume behind. Key industries increasing output.

HEAVY CITRUS FRUIT MOVEMENT BOOSTS FLORIDA FARM INCOME—PHOTOGRAPH BY PHILIP GENDREAU

SIGNIFICANT BUSINESS INDICATORS

COMPILED BY THE STATISTICAL STAFF OF "DUN'S REVIEW"

More detailed figures appear in "DUN'S STATISTICAL REVIEW"

Building Permit Values—215 Cities

GEOGRAPHICAL DIVISIONS:	December 1941	December 1940	Per Cent Change	November 1941	Per Cent Change
New England	$5,156,774	$5,982,262	— 13.8	$5,811,730	— 11.3
Middle Atlantic	14,650,599	24,834,988	— 41.0	11,829,203	+ 23.8
South Atlantic	13,070,966	10,579,853	+ 23.5	8,123,600	+ 60.9
East Central	19,560,186	28,480,684	— 31.3	19,453,504	+ 0.6
South Central	22,840,566	14,279,727	+ 60.0	13,610,609	+ 67.8
West Central	3,299,103	3,544,497	— 6.9	4,321,029	— 23.7
Mountain	1,347,810	1,943,985	— 30.7	2,435,577	— 44.7
Pacific	13,930,745	23,905,580	— 41.7	26,697,833	— 47.8
Total U. S.	$93,856,749	$113,551,576	— 17.3	$92,283,085	+ 1.7
New York City	$6,724,050	$14,600,084	— 53.9	$5,382,568	+ 24.9
Outside N. Y. C.	$87,132,699	$98,951,492	— 11.9	$86,900,517	+ 0.3

Bank Clearings—23 U. S. Cities

(Millions of dollars)

	Monthly			Daily Average		
	1941	1940	1939	1941	1940	1939
January	26,155	24,140	23,383	1,005.9	928.5	935.3
February	22,687	20,641	19,885	1,031.2	897.4	903.8
March	27,609	23,681	25,192	1,061.9	910.8	933.0
April	27,105	23,587	21,931	1,042.5	907.2	879.2
May	27,602	24,361	22,374	1,061.6	936.9	860.5
June	28,094	21,838	23,212	1,123.7	873.5	892.8
July	28,483	22,939	21,576	1,095.5	882.3	863.1
August	27,125	21,046	22,782	1,043.3	779.5	843.8
September	27,308	21,083	24,015	1,092.3	878.5	960.6
October	32,283	25,289	22,469	1,241.7	972.7	898.8
November	28,437	25,224	22,807	1,292.6	1,096.7	991.6
December	33,893	27,862	26,827	1,303.6	1,114.5	1,073.1
Total	336,780	281,691	276,503	1,116.3	931.5	919.6

Bank Clearings for Individual Cities

(Thousands of dollars)

	December 1941	December 1940	Per Cent Change	November 1941
Boston	1,485,676	1,163,475	+ 27.7	1,294,867
Philadelphia	2,747,000	2,131,000	+ 28.9	2,223,000
Buffalo	236,911	168,053	+ 41.0	195,671
Pittsburgh	1,022,409	725,155	+ 41.0	772,593
Cleveland	800,502	577,951	+ 38.5	676,287
Cincinnati	422,832	304,851	+ 38.7	361,757
Baltimore	540,139	415,348	+ 30.0	456,289
Richmond	282,274	213,391	+ 32.3	247,976
Atlanta	483,400	363,500	+ 33.0	415,500
New Orleans	285,967	201,407	+ 42.0	243,785
Chicago	2,050,355	1,541,696	+ 33.0	1,714,254
Detroit	947,904	667,100	+ 42.1	770,566
St. Louis	631,091	467,555	+ 35.0	534,631
Louisville	284,747	192,864	+ 47.6	239,492
Minneapolis	463,067	327,239	+ 41.5	406,777
Kansas City	649,181	460,392	+ 41.0	526,744
Omaha	207,722	149,479	+ 39.0	170,611
Dallas	389,770	276,209	+ 41.1	343,547
Houston	332,029	236,544	+ 40.4	289,290
San Francisco	976,612	720,176	+ 35.6	834,999
Portland, Ore.	240,341	166,630	+ 44.2	259,584
Seattle	282,517	195,907	+ 44.2	259,368
Total 22 Cities	15,762,446	11,665,922	+ 35.1	13,237,588
New York	18,130,956	16,196,350	+ 11.9	15,199,268
Total 23 Cities	33,893,402	27,862,272	+ 21.6	28,436,856

Dun & Bradstreet Wholesale Food Price Index

The index represents the sum total of the wholesale price per pound of 31 commodities in general use.

1942	1941	1940
Feb. 24.. $3.56	Feb. 25.. $2.55	Feb. 27.. $2.30
Feb. 17.. 3.55	Feb. 18.. 2.55	Feb. 20.. 2.34
Feb. 10.. 3.53	Feb. 11.. 2.55	Feb. 13.. 2.33
Feb. 3.. 3.51	Feb. 4.. 2.54	Feb. 6.. 2.34
Jan. 27.. 3.51	Jan. 28.. 2.54	Jan. 30.. 2.36
Jan. 20.. 3.47	Jan. 21.. 2.52	Jan. 23.. 2.35
Jan. 13.. 3.47	Jan. 14.. 2.51	Jan. 16.. 2.34
Jan. 6.. 3.45	Jan. 7.. 2.50	Jan. 9.. 2.35

	High		Low	
1942	$3.56	Feb. 24	$3.45	Jan. 6
1941	$3.43	Dec. 30	$2.50	Jan. 7
1940	$2.49	Dec. 10	$2.18	June 18

Dun & Bradstreet Daily Wholesale Price Index 30 Basic Commodities

(1930-1932 = 100)

	1942		1941	
	Feb.	Jan.	Dec.	Nov.
1	†	*	144.61	143.40
2	154.14	151.54	144.74	†
3	154.31	152.16	145.88	143.51
4	154.57	†	145.92	*
5	154.78	152.75	147.07	144.06
6	154.34	152.83	147.16	144.38
7	154.33	153.16	†	144.91
8	†	152.75	148.93	144.99
9	154.38	153.06	148.62	†
10	154.34	153.34	148.32	144.88
11	154.70	†	150.01	*
12	*	154.24	150.54	144.16
13	154.87	153.75	149.55	144.14
14	154.93	153.90	†	144.33
15	†	153.96	149.93	144.21
16	155.10	154.12	150.40	†
17	155.42	154.31	149.82	143.95
18	155.19	†	149.64	144.01
19	155.11	154.06	149.57	144.18
20	155.20	154.15	149.42	*
21	155.31	154.22	†	144.11
22	†	154.69	149.94	144.29
23	*	155.10	149.68	†
24	155.50	155.24	149.99	143.90
25	154.68	†	*	143.62
26	154.92	155.89	149.91	143.41
27	155.05	155.52	150.03	143.72
28	155.25	154.01	†	143.73
29		154.71	150.13	144.01
30		154.97	150.48	†
31		154.41	150.36	

† Sunday. * Markets closed.

	High		Low	
1942	155.89	Jan. 26	151.54	Jan. 2
1941	150.54	Dec. 12	123.03	Feb. 17
1940	124.84	Dec. 31	112.42	Aug. 19

INDUSTRIAL AND COMMERCIAL FAILURES

	Number of Failures		Current Liabilities *Thousands of dollars*		Total Liabilities *Thousands of dollars*		Dun's Insolvency Index† Unadjusted		Adjusted‡	
	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940
Jan.	1,124	1,237	11,888	15,279	12,535	15,805	62.2	67.1	51.8	54.6
Feb.	1,129	1,042	13,483	13,472	14,323	13,600	71.3	66.7	62.0	58.0
Mar.	1,211	1,197	13,444	11,681	14,754	12,130	62.5	62.6	61.3	61.4
Apr.	1,149	1,291	13,827	16,247	15,068	17,114	61.5	70.1	58.6	67.4
May	1,119	1,238	10,065	13,068	10,215	13,437	59.9	66.9	58.7	65.6
June	970	1,114	9,449	13,734	10,183	25,101	53.9	62.5	55.0	64.4
July	908	1,175	13,422	16,213	14,097	17,756	50.4	63.0	56.0	70.8
Aug.	954	1,128	11,134	12,997	11,949	13,223	49.0	60.6	57.0	71.3
Sept.	735	976	9,393	11,397	10,904	15,473	40.7	54.3	48.4	64.6
Oct.	809	1,111	7,333	12,715	7,772	14,236	44.8	61.7	48.2	67.1
Nov.	842	1,024	9,197	16,572	10,514	17,987	48.4	61.9	46.1	59.5
Dec.	898	1,086	13,469	13,309	16,131	14,480	49.5	58.0	49.5	57.4
Total	11,848	13,619	136,104	166,684	148,445	190,342	54.4	63.0	...	...

† Apparent annual failures per 10,000 enterprises. ‡ For seasonal variation. * Series revised from 1933 on to exclude real estate and financial companies. ** Series revised to include voluntary discontinuances with loss to creditors.

Summary, 1930 – 1941
(Current Liabilities in Thousands)

Year	Number	Liabilities	Index
1930	26,355	668,282	121.6
1931	28,285	736,310	154.1
1932	31,822	928,313	102.6
1933	20,307	502,830	102.6
1933*	19,859	457,520	100.3
1934	12,091	333,959	61.1
1935	12,244	310,580	61.7
1936	9,607	203,173	47.8
1937	9,490	183,253	45.9
1938	12,836	246,505	61.1
1939	11,408	168,204	53.7
1939**	14,768	182,520	69.6
1940	13,619	166,684	63.0
1941	11,848	136,104	54.4

ANALYZING *the* RECORD *of* INDUSTRIAL *and* COMMERCIAL FAILURES

ANNUAL FAILURES DOWN FOR THIRD CONSECUTIVE YEAR

INDUSTRIAL and commercial failures totalled 11,848 in 1941, a number which represented a decline of 1,771 failures, or 13 per cent, from the 13,619 reported in 1940. There has, therefore, been a gradual falling off in the annual number of failures during the last three years, with the rate of decline increasing in 1941 over 1940.

The month-to-month trend was steadily downward during the greater part of the year, as shown by the course of the adjusted insolvency index. Continued and substantial decreases toward the end of the year carried the index to a point not only under the 1940 lower limit, but even below the previous low in January 1937. It even reached the all-time low of some of the months of 1918-1920. The 1941 total, however, did not fall as low as the totals of these earlier years. In this comparison with the past, account was taken of the fact that the failure record since revisions in 1939 has run some 30 per cent above the previous record because of the widening of the term "failure" to include all cases of loss to creditors whether or not court proceedings were invoked.

Liabilities were also low in 1941. In fact, the drop in potential money losses was more pronounced than the drop in the actual number of failures. Current liabilities amounted to only $136,104,000 against $166,684,000 in 1940, a drop of 19 per cent compared with the 13 per cent drop in failures. Four times during the year current liabilities were under $10,000,000 a month, a record not equalled since the aforementioned low years of 1919 and 1920.

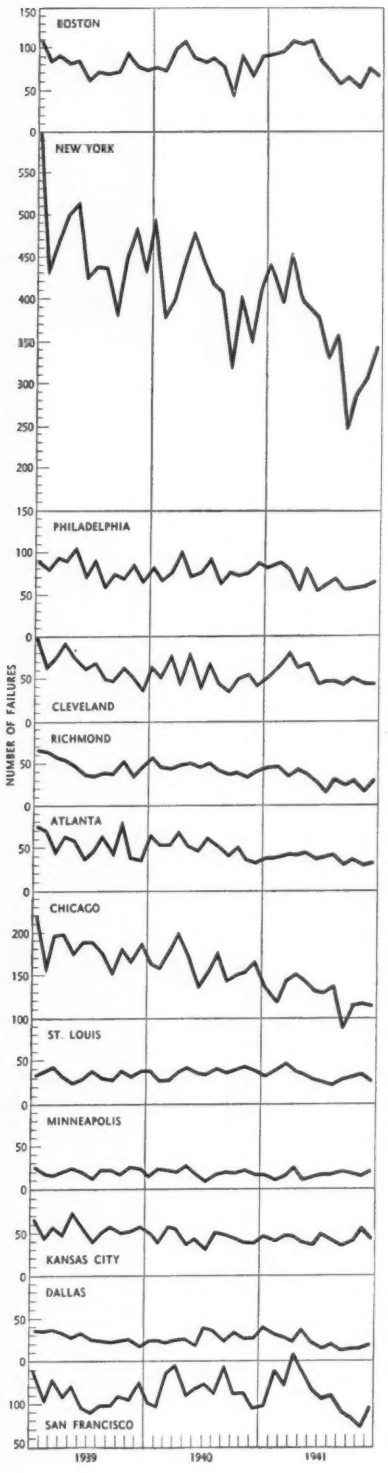
The records show a definite well-marked decline of 26 per cent in the number of failures among concerns with liabilities of over $100,000. In specific numbers these large failures were down from 210 in 1940 to 163 in 1941. A decline of almost equal proportions took place among failures with liabilities between both $25,000 and $100,000 and $5,000 and $25,000. Among the small failures, however, very little change from 1940 was noted.

Size Group Liabilities	1941	1940	Per Cent Change
Under $5,000	6,754	6,891	— 2
$5,000–$25,000	4,116	5,442	—24
$25,000–$100,000	815	1,067	—24
$100,000–$1,000,000	153	209	—27
$1,000,000 and over	10	10	0
Total	11,848	13,619	—13

The most appreciable changes from 1940 levels were in manufacturing and wholesale trade, where failures were down about 20 per cent in each group. In comparison with these declines, retail trade failures were off only 11 per cent from their 1940 total, and construction and commercial service failures only 7 and 9 per cent respectively.

Industry Group	1941	1940	Per Cent Change
Manufacturing	1,974	2,455	—20
Wholesale Trade	1,045	1,316	—20
Retail Trade	7,589	8,495	—11
Construction	701	760	— 7
Commercial Service	539	593	— 9
Total	11,848	13,619	—13

FAILURES IN FEDERAL RESERVE DISTRICTS



Textile mill products, with a drop of 61 per cent, heads the list of industries in which failures were very much lower in 1941 than in 1940. In many lines the rate of decline and the spread between the 1940 and 1941 levels became progressively greater as the year went on. Failures among producers of textile mill products, paper products, and iron and steel products showed a particularly sharp drop in the last quarter of 1941.

FAILURES IN MANUFACTURING LINES, 1941 AND 1940

	1941	1940	*Per Cent Change*
Textile Mill Products	36	92	—61
Paper and Allied Products	15	37	—59
Shoes	26	61	—57
Lumber and Basic Products	36	79	—54
Men's Clothing	46	87	—47
Iron and Steel Products	61	116	—47
Furniture	111	165	—33
Chemicals	94	122	—23
Machinery	91	117	—22
Women's Clothing	229	288	—20
Non-ferrous Metals and Products	53	55	— 6
Foods	423	400	+ 5
Stone, Clay, and Glass Products	42	34	+19

Retail Failures

Retail trade failures were affected favorably by a happy combination of increased demand and rising prices, and ended the year with a total 11 per cent under that of 1940. Failures among automobile accessory stores were cut nearly in half; men's and women's wear failures were down in the neighborhood of a third. Hardware and paint stores, furniture stores, and food stores and restaurants, which at the end of the first six months had experienced more failures than in the first six months of 1940, ended the year with decreases, as the result of rapidly falling failures in the last quarter. Two lines, automobiles and building materials, ended the year with more failures than in 1940, for the declines in the last quarter were not sufficient to offset increases earlier in the year.

Increased rather than decreased failures were recorded in Massachusetts and, to a very slight extent, in Vermont and Rhode Island. The greatest improvement over last year was in the Southern districts, Richmond and Atlanta, where failures were down 29 and 27 per cent respectively. The Chicago area showed a 23 per cent drop. Failures in the Cleveland, Kansas City, and San Francisco districts, however, were down less than 10 per cent, leaving the balance of the country, covered by New York, Philadelphia, Minneapolis, St. Louis, and Dallas districts, to register the average drop of about 13 per cent.

FAILURES IN RETAIL TRADES, 1941 AND 1940

	1941	1940	*Per Cent Change*
Automobile Accessories	42	82	—49
Women's Wear	423	686	—38
Men's Wear	326	464	—30
General Merchandise	399	533	—25
Hardware	273	310	—12
Furniture	484	537	—10
Drugs	464	518	—10
Restaurants	1,140	1,219	— 6
Foods	2,470	2,547	— 3
Automobile Dealers	151	146	+ 3
Building Materials	145	129	+11

Despite these decreases, nearly one-half of the 25 largest cities reported more failures in 1941 than in 1940. Among them were Kansas City, St. Louis, Pittsburgh, and New Orleans.

FEDERAL RESERVE DISTRICTS	Total 1941	Total 1940	*Per Cent Change*
Richmond	379	536	—29
Atlanta	461	634	—27
Chicago	1,524	1,971	—23
Minneapolis	194	228	—15
Philadelphia	802	929	—14
St. Louis	383	443	—13
Dallas	273	313	—13
New York	4,339	4,944	—12
San Francisco	1,349	1,439	— 6
Kansas City	520	541	— 4
Cleveland	642	665	— 3
Boston	982	976	+ 1
Total	11,848	13,619	—13

Legal Type

Total annual failures have divided very uniformly into so-called court cases and other types during the last three years of generally declining numbers. Concerns in financial difficulties which have invoked the various provisions of the National Bankruptcy Act comprised 68 per cent of total failures in 1939 and 69 per cent in both 1940 and 1941. Such other types of failure as foreclosures, executions, attachments, and voluntary closings with loss to creditors made up the remaining 32 and 31 per cent.

Among the court cases in 1941, one-half were straight voluntary bankruptcies. This was a slight increase over the 46 per cent representation of bankruptcies in the previous years, and was at the expense of reorganizations, arrangements, and receiverships.

If the court method employed by the large failures to solve their financial

difficulties is any guide to their financial strength or weakness, it would appear that in 1941 a larger proportion than usual were actually solvent and in a position, therefore, to seek an adjustment of unsecured debt rather than liquidation. Petitions for such arrangements under Chapter XI of the Bankruptcy Act were filed by 27 per cent of the large failures as against the use of this provision by only 19 per cent in 1940, while actual bankruptcy was resorted to in only 17 per cent compared with 24 per cent last year. Reorganizations under Chapter X of the Act lost 4 per cent.

Possible Effect

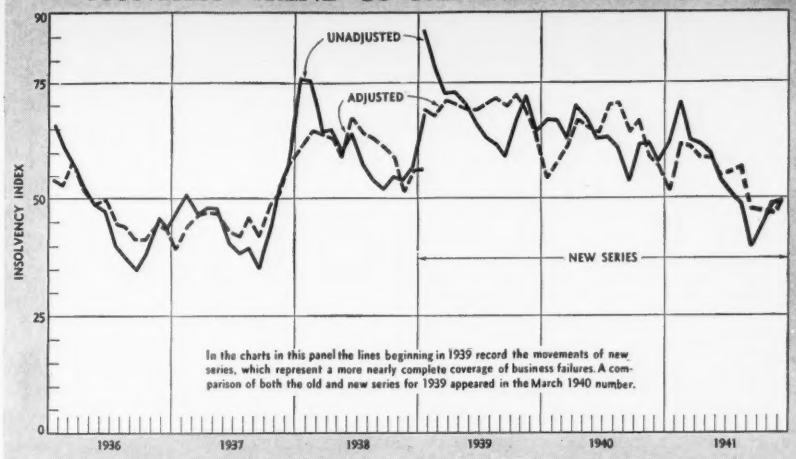
There is expectation in some quarters that the failure record will soon begin to show the effect upon business continuance of shortages of materials and finished goods. During 1941 the record was apparently influenced primarily by the increase in business activity and it remains to be seen whether closings due to shortages will result in loss to creditors and thus find their way into the failure record in sufficient numbers to outweigh the decline due to war activity.

Although the general trend of failures during 1941 was downward, the year did end with a slight upturn. Not only were reported failures up in December to 898 from 842 in November, but the insolvency index when adjusted for seasonal variation rose from the November low of 46.1 to 49.5. This 3.1 increase marked the first monthly rise in the adjusted index since a couple of 1 point rises in July and August but it is too soon to say whether or not this rise means that the end of the decline has been reached and that we may now expect continued increases.

Manufacturing failures were down appreciably during December, but this move was offset by a moderate increase in retail trade failures, supplemented by sharp increases in the three remaining small groups of wholesalers, builders, and service organizations.

The manufacturing decline extended

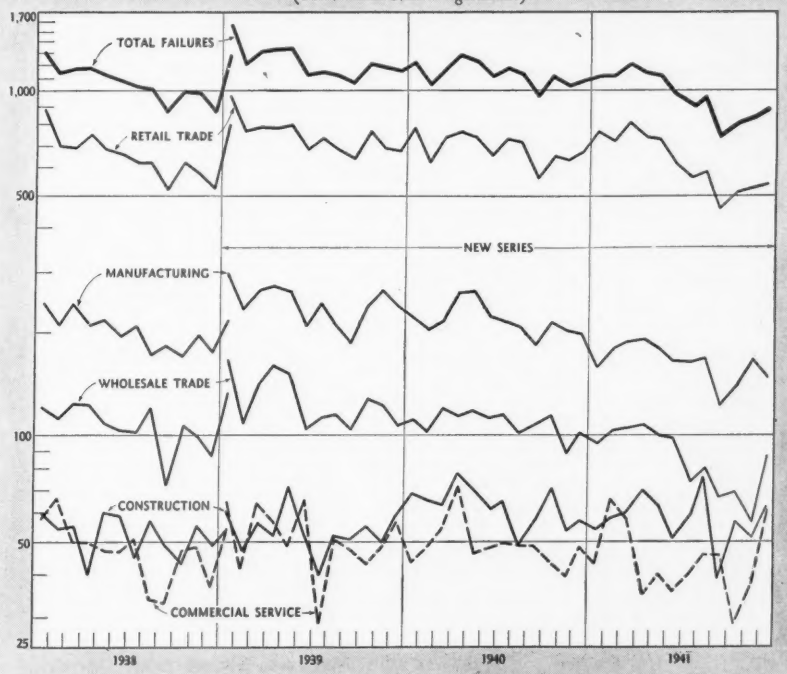
MONTHLY TREND OF THE INSOLVENCY INDEX



In the charts in this panel the lines beginning in 1939 record the movements of new series, which represent a more nearly complete coverage of business failures. A comparison of both the old and new series for 1939 appeared in the March 1940 number.

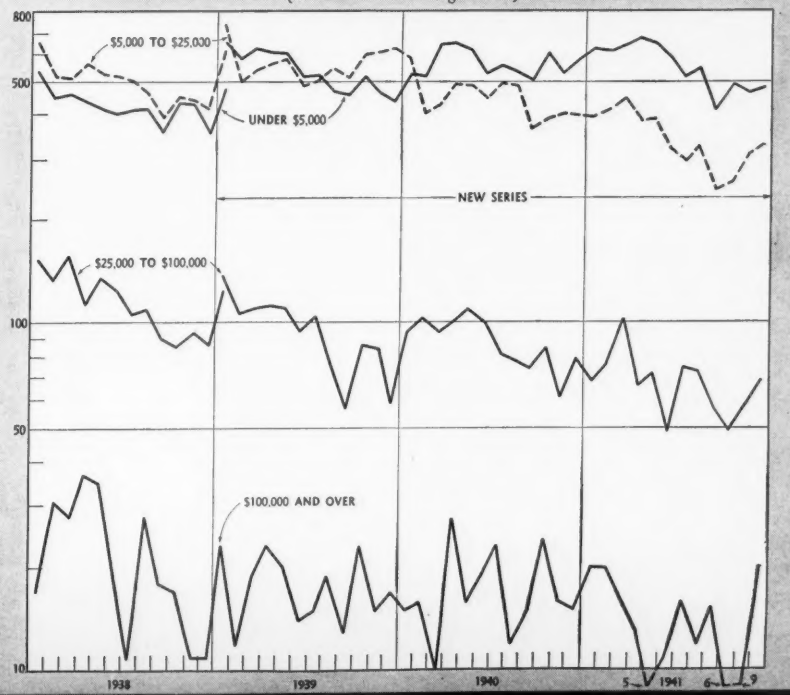
FAILURES BY INDUSTRIAL GROUPS

(The Vertical Scale is logarithmic)



FAILURES BY SIZE OF LIABILITIES

(The Vertical Scale is logarithmic)



throughout all of the important lines except two, apparel, and iron and steel products. The moderate rise in retail trade was the result of varied trends, increases in food, general merchandise, and hardware stores being practically balanced by decreases in apparel shops, in drug stores, and automotive lines.

The wholesale trade rise was most drastic with increases noted in every line. A gradual downward trend during the year from a total of 108 in Spring to a low of 57 in November was reversed by a more than 50 per cent rise in December to a total of 87. Increases in construction and commercial service amounted to 22 and 62 per cent respectively.

A significant feature of the December record was the increase in the number of large manufacturing failures from 2 in November to 12, and in the number of substantial retail failures from 9 to 20.

The Middle Western sections of the country covered by the Federal Reserve Districts of Cleveland, Chicago, St. Louis, and Kansas City, and the New England States had little share in the December rise; the remaining Middle Atlantic, Southern, and Western regions absorbed the greater part of it.

Failures by Divisions of Industry—Yearly Totals and December 1941 and 1940

(Current liabilities in thousands of dollars)

	Number				Liabilities			
	Year 1941	Year 1940	Dec. 1941	Dec. 1940	Year 1941	Year 1940	Dec. 1941	Dec. 1940
Total United States	11,848	13,619	898	1,086	136,104	166,684	13,469	13,309
Mining, Manufacturing (total)	1,974	2,455	146	188	51,243	66,799	5,651	5,928
*Mining—Coal, Oil, Misc.	72	77	4	6	2,983	9,146	577	117
Food and Kindred Products	423	400	25	30	12,581	14,022	547	2,347
Textile Mill Prods. and Apparel	437	611	42	59	6,684	10,975	877	873
Lumber and Lumber Products	211	304	12	20	4,248	6,311	238	254
Paper, Printing, and Publishing	177	237	14	11	4,200	5,664	206	259
Chemicals and Allied Products	94	122	11	13	1,396	2,706	254	441
Leather and Leather Products	74	108	6	10	1,477	2,018	159	158
Stone, Clay, and Glass Products	42	34	3	3	1,109	1,258	81	422
Iron and Steel, and Products	61	116	4	6	2,799	3,082	553	708
Machinery	91	117	5	6	3,250	3,016	780	72
Transportation Equipment	27	40	1	1	1,718	2,764	2	15
Miscellaneous	265	289	19	23	8,798	5,837	1,377	262
Wholesale Trade (total)	1,045	1,316	87	102	18,581	20,405	1,471	1,576
Food and Farm Products	406	487	27	44	8,744	7,651	396	814
Apparel	58	81	6	4	708	1,101	57	58
Dry Goods	32	54	3	8	502	506	15	27
Lumber, Bldg. Materials, H'ware	85	117	9	6	2,295	2,899	119	199
Chemicals and Drugs	55	53	8	5	817	498	430	29
Motor Vehicles, and Auto Equip.	66	67	5	10	995	902	103	80
Miscellaneous	343	457	29	25	4,520	6,848	351	369
Retail Trade (total)	7,589	8,495	540	691	48,934	58,115	4,323	4,097
Food and Liquor	2,470	2,547	211	224	11,004	12,074	1,026	927
General Merchandise	399	533	34	35	2,528	4,478	295	225
Apparel and Accessories	1,114	1,590	51	110	6,703	10,647	370	641
Furniture, Home Furnishings	484	537	29	40	4,755	4,852	348	291
Lumber, Bldg. Materials, H'ware	418	439	26	53	4,146	4,363	347	429
Automotive Group	544	594	30	43	3,894	4,738	219	325
Eating and Drinking Places	1,140	1,219	94	99	8,132	9,616	672	787
Drug Stores	464	518	30	55	3,937	3,528	862	307
Miscellaneous	556	518	35	32	3,835	3,819	184	165
Construction (total)	701	760	63	57	10,671	13,311	1,161	1,043
General Building Contractors	201	197	17	19	5,070	5,263	460	500
Building Sub-contractors	466	529	43	36	3,768	6,043	295	475
Other Contractors	34	34	3	2	1,883	2,005	406	68
Commercial Service (total)	539	593	62	48	6,675	8,054	863	665
Passenger and Freight Transportation—Highway	124	157	11	9	2,436	2,400	368	254
Miscellaneous Public Services	9	6	1	2	266	44	50	17
Hotels	17	38	6	3	347	1,307	153	60
Cleaning, Dyeing, Repairing	79	133	9	16	542	1,219	55	103
Laundries	67	55	9	6	1,635	965	81	144
Undertakers	34	32	4	3	337	405	52	44
Other Personal Services	71	70	5	3	340	357	46	9
Business and Repair Services	138	102	17	6	772	1,357	58	34

* Subtract this item to obtain manufacturing total.

Canadian Failures

Failures in the Dominion of Canada showed a decline for the second succeeding year. Total numbers were down from 1,158 in 1940 to 882 in 1941, and liabilities fell from $9,578,000 to $6,959,000. This drop of 24 per cent in numbers and 40 per cent in money losses exceeded the drop from 1939 to 1940 of 11 per cent in numbers and 18 per cent in liabilities.

Industrially, the sharpest decline was in wholesale trade failures, which fell 42 per cent from their 1940 count. Manufacturing failures were also down substantially with a 34 per cent drop Retail trade failures, however, were only 20 per cent below the 1940 total; and there was little change in the number of failures occurring in construction lines.

The lessening in failures was most apparent in the Eastern Provinces, particularly New Brunswick, Ontario, and Manitoba. Quebec, however, experienced only a moderate decline of 13 per cent. To the west, failures in Saskatchewan and Alberta were off nominally, and in British Columbia rose slightly.

December failures numbered 78 with liabilities of $722,000 compared with 80 in November with debts of $539,000 and 95 a year ago with debts of $656,000.

TOWERS—*Solvent recovery towers at B. F. Goodrich's Koroseal spreading and coating plant in Akron, Ohio, 78, 68, and 54 feet high, were received on the site completely assembled and were erected in one piece.*

HERE *and* THERE *in* BUSINESS

WHAT'S NEW AS OBSERVED BY THE AGENCY'S REPORTERS

BY the early part of this Spring, the national breakfast table will boast another breakfast cereal with which parents may tempt reluctant offspring into eating what's good for them. The new product is Cheerioats, doughnut-shaped, oaty.

The result of deliberate laboratory research on the problem of a ready-to-eat breakfast food of oats, it's expected by its maker, General Mills, Inc., Minneapolis, Minn., to be a profitable companion for their ubiquitous Wheaties, and KIX.

Over 500 different formulas were tried during the research which developed the product. More than ten shapes and sizes were tested for the individual flakes before selection of the doughnut style.

After the research was completed, the food went to six orphanages, where for five days 752 children passed judgment on it. Then it was sampled at home by 3,000 persons in a competitive comparison with other cereals. After this it was tested in the retail stores of six cities, Peoria, Sacramento, Harrisburg, Providence, Milwaukee, and Houston.

Even the name has the blessings of research. A list of possible names was put by psychological test to groups of college students and housewives in five cities. Cheerioats won.

Wood File—The need for conserving steel for war use has brought a variation to an old invention in filing cabinets. The first vertical files were made of wood, and last month Remington Rand Inc., Buffalo, N. Y., announced The Guardsman, their newest vertical file made of wood, painted like steel.

Substitution of wood for steel in manufacture of the new files will, it is estimated, save 6,900 tons of the metal annually. The wood file comes in letter and legal sizes, four drawers high. The only steel is in drawer slides. These are tested for 85-pound loads over a normal life of business use.

The new filing cabinet is enameled in olive green and can stand next to its steel brothers with hardly an apparent difference. The hardware is of Tenite plastic, thus conserving bronze.

Remington Rand Inc. says that manufacture of steel files in sizes other than letter and legal is being continued.

Auto-Typist—Typing form letters by pushing buttons which select desired paragraphs is possible with a new model of the automatic typewriter of the American Automatic Typewriter Company, Chicago, Ill.

The new feature consists of banks of push buttons. These control two perforated paper rolls which in turn control a mechanism that operates an ordinary typewriter.

Users of this Auto-Typist push-button model place the paragraphs most likely to follow each other on different rolls; while a paragraph on roll one is being typed, the succeeding paragraph is being located on roll two.

A previous model of this automatic typewriter was controlled by a dial. After each paragraph had been printed, the operator dialed the number which brought automatic selection and typing of the next paragraph.

The new push-button control is also planned for use of the machine in order writing and billing where some of the work is repetitive. For example, a steady customer's name, address, shipping instructions, and terms of sale can be typed automatically. There is also a button which allows any part of this material to be omitted. Order quantities are typed manually while the automatic typing mechanism waits.

Oscillating Lens—Although the living eye, with its elastic lens, automatically focuses objects at varying distances, optical engineers have had small enthusiasm for ingenious proposals to accomplish the same purpose with a photographic lens. But a four-element

FOCUS—*An enlargement of a 35 mm. picture of a boy standing directly in front of the Smith-Dieterich electroplane camera with oscillating Bausch & Lomb lens, shows that a restaurant across the street in the background is also in focus.*

motion picture lens has now been designed by Bausch & Lomb Optical Company, Rochester, N. Y., in which one double-concave element is electronically oscillated on its axis by means of a special cell mounting developed by

WHAT EMPLOYERS SHOULD KNOW ABOUT LOAN COSTS

DO YOU KNOW how much it actually costs your employes to borrow from a family finance company? Many executives believe the charges to be far higher than they actually are.

Suppose one of your men suddenly needs $50 to meet an emergency. He tells Household Finance about his problem and gets the money in a quick, private transaction. No endorsers or guarantors are required.

$50 loan costs $4.48

The borrower chooses, from a variety of payment plans, the one which best fits his own income and situation. He may, for instance, choose to repay his $50 loan in six monthly instalments of $9.08 each—a total of $54.48. In that case, the total cost of his $50 loan is only $4.48. This charge includes everything. There is nothing more to pay. A $100 loan, repaid in six monthly instalments of $18.15 each, a total of $108.90, costs just $8.90.

How cost may be reduced

When an employe borrows at Household Finance, he pays charges only on his monthly balance, not on the original amount of the loan. The sooner a loan is repaid, the less it costs. If a borrower should receive a bonus and wish to repay part or all of his loan ahead of schedule, he may do so at any time. The charges are reduced in exact proportion to the extent of the prepayment.

The table below shows some typical loan plans. Payments include all charges. Charges are made at the rate of 2½% per month (less in many territories on larger loans). Household's charges are below the maximum rates authorized by the Small Loan Laws of most states.

Last year Household Finance made over 800,000 loans to workers in all branches of industry. These loans helped troubled families to pay medical expenses, keep insurance in force, clean up old debts and maintain living standards.

We would like to send you more information about Household Finance service without obligation. Please use the coupon.

WHAT BORROWER GETS	WHAT BORROWER REPAYS MONTHLY				
	2 paymts	6 paymts	12 paymts	15 paymts	18 paymts
$ 20	$ 10.38	$ 3.63	$ 1.95		
50	25.94	9.08	4.87		
100	51.88	18.15	9.75	$ 8.08	$ 6.97
150	77.82	27.23	14.62	12.11	10.45
200	103.77	36.31	19.50	16.15	13.93
250	129.71	45.39	24.37	20.19	17.42
300	155.65	54.46	29.25	24.23	20.90

Above payments include charges of 2½% per month and based on prompt payment are in effect in seven states. Due to local conditions, rates elsewhere vary slightly.

HOUSEHOLD FINANCE
Corporation
ESTABLISHED 1878

Headquarters: 919 N. Michigan Ave., Chicago
One of America's leading family finance organizations, with 305 branches in 203 cities

HOUSEHOLD FINANCE CORPORATION, Dept. DR-B
919 N. Michigan Ave., Chicago, Ill.

Please tell me more about your loan service for wage earners—without obligation.

Name.....

Address.....

City.....*State*.....

P. Stanley Smith, a New York radio engineer.

The new lens is confined to a distance of three-tenths of a millimeter in its axis movement but the oscillations are at the rate of 23,200 times per minute, thus continuously altering the focus so that all objects are uniformly in register from four feet to infinite. The objects are slightly softer in focus than with lenses of a fixed focal length.

The new lens has been incorporated successfully in a motion picture camera. Bausch & Lomb engineers state emphatically that it cannot be applied to hand cameras.

Present motion picture cameras require that action be limited within the set focus of the camera. Actors must work within a chalk line necessitated by the focal range of the cameras. Lighting must be rearranged for each new focus, and cameras reset.

Electrographic—Identifying the quality of metals quickly without harming them is being done by a combination of chemistry and electricity in research work at the Bell Laboratories, New York City. The analysis is a form of contact printing in which electricity rather than light impresses the image.

Known as electrographic analysis, the method involves flowing a small electric current through a piece of metal resting against a damp, chemically treated paper. Some of the metal is carried by electrolysis into the paper, to be developed by dipping in the proper chemicals. The paper then reveals a colored area where the metal touched it.

The color, in connection with knowledge of what chemical brought it out, discloses what the metal is, and variations in its hue or its coverage of the paper disclose presence of other metals, imperfections in the plating, or distribution of some other substance in parts of the metal.

Flaming Brush—Finished hulls of naval ships, barges, and cargo vessels are being brushed with flame now before they feel paint. A workman using a high-temperature oxyacetylene torch with a broad, many-flamed tip systematically brushes flat surfaces at a rate of ten to twenty linear feet a minute.

This flame painting has a two-fold purpose: It cleans mill scale from the steel and it helps prevent rust by driving off moisture just before the paint is applied. Ships' anchors are cleaned in nineteen minutes.

DETROIT LIGHT—*For Detroit's residential streets, this new luminaire improves the city's present night visibility 200 per cent and also cuts street lighting costs. Prisms inside a refractor globe in the lower half direct light rays away from nearby houses toward the street area. The units, says the General Electric Company, can be spaced farther apart without producing areas of low visibility or of discomforting glare.*

The process was introduced commercially, says the Air Reduction Company, New York, about three years ago. In 1939 it was applied successfully in cleaning the Golden Gate Bridge, nearly 100,000 tons of steel.

Paper Misers—Eleven ways to conserve office stationery are suggested by E. Y. Horder, 80-year-old president of Horder's Inc., Chicago, Ill., who points out that the war requires increased consumption of the kind of paper from which most office stationery is made.

Some of the eleven suggestions have already been well publicized: collecting waste paper for sale to dealers and salvaging incoming cartons and cases for reuse.

Horder urges that letters be short and to the point or be written on both sides of letterheads and second sheets when brevity is impossible. He recommends ordering a shorter size for 25 to 50 per cent of all letterheads, memo forms, and second sheets; and that the reverse side of a letter be used for the carbon of the answer—thus saving paper clips, staples, and filing cabinet space.

Other suggestions for paper conservers were smaller size memo and

Mrs. Martin's compact is on the firing line in the Pacific

"I never dreamed a woman's metal vanity case could help win the war, until I went to get the gorgeous new Volupte model I'd set my heart on. Now the jewelry manufacturers like Volupte are making metal cases for the kind of powder that goes 'bang'. So I don't have just the compact I wanted. But I do have the pleasure of knowing there's a kind of personal token from me now on its way to Japan."

Making the grim munitions of war in addition to fine jewelry is a real manufacturing achievement. Yet so efficiently have Volupte and others overcome the new problems, that the jewelry industry is now one of the mainstays of our armed forces. In cooperation with the Revere Technical Advisory staff, Volupte and others have found the path to munitions made smoother, easier, quicker. This is the type of service, beyond the supplying of sound copper alloys, which Revere brings to industry generally.

So vital are copper and brass that every ounce goes directly into war materials. Fortunately, in spite of the difficulties of past years, Revere built new plants, installed better equipment, improved processes. This program, begun in 1937, has enabled us to go straight into production of essentials in modern warfare. Yet until the day of victory Revere will never rest. More plants are already being built to serve us all.

The Revere Technical Advisory Service functions in (1) developing new and better Revere materials to meet active or anticipated demands; (2) supplying specific and detailed knowledge of the properties of engineering and construction materials; (3) continuously observing developments of science and engineering for their utilization in production methods and equipment; (4) helping industrial executives make use of data thus developed. This service is available to you, free.

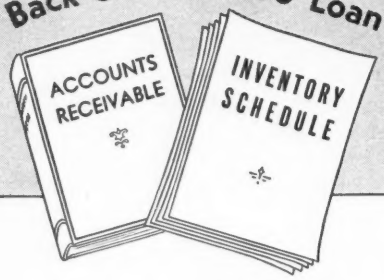
REVERE COPPER AND BRASS INCORPORATED

EXECUTIVE OFFICES: 230 PARK AVENUE, NEW YORK

GOOD BUSINESS NEWS

$611,000 COLLATERAL

Back of a $2,000 Loan



WHY

a Wealthy and Prospering Company Borrows Money it DOESN'T NEED!

A LITTLE over three years ago, The Glassburg Metal Goods Co.* ended its fiscal year with a net loss of $272,675 on $5,429,169 net sales.

Despite the fact that it could show a net worth of $2,663,347, the Company's cash position was precarious. It couldn't take discounts on purchases. It couldn't buy supplies in large enough quantities to get advantageous prices.

Though its merchandise was in good demand, it couldn't increase production or expand sales because it couldn't finance additional business.

Its credit with two local banks was limited, because the *resources of the banks were limited*, and large, out-of-town banking connections were unwilling to extend the necessary lines.

So the company turned to us for financing. Our service was just what it needed. Within twenty-four hours, we had made an advance of more than twice what the company had tried, but failed, to get from its banks.

Today, with net worth of more than $3,000,000 and working capital of nearly $1,000,000, the company continues to make use of Commercial Credit OPEN ACCOUNT Financing.

On the basis of current collateral, consisting of receivables and inventory assigned to Commercial Credit Company, it could obtain more than $600,000 on request.

Of this potential credit, it actually uses and pays charges on only $2,000, because, in the words of the president, "we want to keep our connection with Commercial Credit Company on a permanent basis, so that if the time ever comes when we need a substantial sum in a hurry, we can get it without red-tape or delay."

* * * * *

For the complete details of this remarkable experience in modern business financing, send for the booklet "ANCHOR TO WINDWARD." Address Dept. 1501.

**A fictitious name, but the facts and figures, taken from our files, can be verified.*

COMMERCIAL CREDIT COMPANY

"Non-Notification" Open Account Financing

BALTIMORE

BOSTON NEW YORK CHICAGO SAN FRANCISCO LOS ANGELES PORTLAND, ORE.

CAPITAL AND SURPLUS MORE THAN $60,000,000

scratch pads; lighter weight paper; 6¾ size (3⅜ x 6½ inch) envelopes instead of the long ones; and duplicating machine bulletins printed on both sides of a paper sheet.

Thermo-Charged—An oil salesman takes several test tubes containing lubricating oils, drops in each a long metal strip, and sets them over a heater. Presently the oil in some begins to creep up the metal strips, leaving the hottest areas.

A dramatic demonstration this, and used to telling effect by the Standard Oil Company of California, whose Thermo-Charged RPM motor oil doesn't retreat from the heat. The product is a compounded motor oil, that is, a straight mineral oil to which has been added a group of complex chemicals intended to make the oil stay put on very hot surfaces.

Thermo-Charged RPM also has special detergent properties to hold in suspension the undesirable impurities formed during use. These, instead of gathering as sludge, drain from the crankcase in the oil when it is changed.

Pine Oil—In separating metals from the ores which hold them, pine oil is required in great quantities; more so than ever with the war needs. At the same time use of the oil in the manufacture of woolen clothing for the Army and Navy has also increased.

A way of making synthetic pine oil from gum turpentine, thus increasing the supply; has been developed by the Naval Stores Department of Hercules Powder Company, Inc.

The synthetic has substantially the same chemical and physical properties as natural pine oil. The latter is taken from the stumps of pine trees, left after lumbering operations. Live trees, tapped to produce gum turpentine, are the synthetic's source. Gum turpentine is relatively expensive, and so, therefore, is the synthetic pine oil.

Read on the Run—The 1941 income tax is so disturbing that New York University has sold business men a series of lectures called "Taxes on 1941 Income," under the direction of tax consultant J. K. Lasser, C.P.A. They run two months, ending March 12. . . . The Bell System added 1,361,000 telephones in 1941, its largest increase.

A WAR MESSAGE
to
ALL EMPLOYERS

★ From the United States Treasury Department ★

WINNING THIS WAR is going to take the mightiest effort America has ever made—in men, in materials, and in money! Every dollar, every dime that is not urgently needed for the civilian necessities of food, clothing, and shelter, must, if we are to secure final Victory, be put into the war effort.

An important part of the billions required to produce the planes, tanks, ships, and guns our Army and Navy need must come from the sale of Defense Bonds. Only by regular, week by week, pay-day by pay-day investment of the American people can this be done.

This is the American way to win. This is the way to preserve our democratic way of life.

Facing these facts, your Government needs, urgently, your cooperation with your employees in *immediately* enrolling them in a

PAY-ROLL SAVINGS PLAN

The Pay-Roll Savings Plan is simple and efficient. It provides, simply, for regular purchases by your employees of United States Defense Bonds through systematic—yet voluntary—pay-roll allotments. All you do is hold the total funds collected from these pay-roll allotments in a separate account and deliver a Defense Bond to the employee each time his allotments accumulate to an amount sufficient to purchase a Bond.

The Pay-Roll Savings Plan has the approval of the American Federation of Labor, the Congress for Industrial Organization, and the Railroad Brotherhoods. It is now in effect in several thousand companies varying in number of employees from 3 to over 10,000.

In sending the coupon below, you are under no obligation, other than your own interest in the future of your country, to install the Plan after you have given it your consideration. You will receive—1, a booklet describing how the Plan works; 2, samples of free literature furnished to companies installing the Plan; 3, a sample employee Pay-Roll Savings authorization card; and 4, the name of your State Defense Bond administrator who can supply experienced aid in setting up the Plan.

To get full facts, send the coupon below —today! Or write, Treasury Department, Section B, 709 Twelfth St., NW., Washington, D. C.

HOW THE PAY-ROLL SAVINGS PLAN HELPS YOUR COUNTRY

1. It provides immediate cash now to produce the finest, deadliest fighting equipment an Army and Navy ever needed to win.
2. It gives every American wage earner the opportunity for financial participation in National Defense.
3. By storing up wages, it will reduce the current demand for consumer goods while they are scarce, thus retarding inflation.
4. It reduces the percentage of Defense financing that must be placed with banks, thus putting our emergency financing on a sounder basis.
5. It builds a reserve buying power for the post-war purchase of civilian goods to keep our factories running after the war.
6. It helps your employees provide for their future.

MAIL THIS COUPON NOW

Treasury Department, Section B
709–12th St., NW.
Washington, D. C.

We want to do our part. Please rush full information regarding the Pay-Roll Savings Plan.

NAME .....

POSITION .....

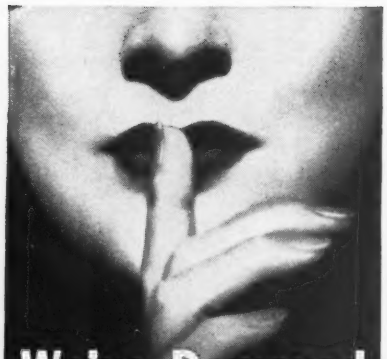
COMPANY NAME .....

ADDRESS .....

NUMBER OF EMPLOYEES .....

MAKE EVERY PAY-DAY ... BOND DAY!

U. S. Defense BONDS ★ STAMPS



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Costly Noise
From 17,216 Offices

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Free Liberty STORAGE BINDER

War time tax laws make record storage vitally necessary to the well being of your concern. Today you must have fool-proof storage facilities. Acquaint yourself with this inexpensive and efficient permanent binder by sending for this absolutely FREE sample binder today.

THEY'RE EASY TO USE
The **Liberty** Permanent Binder consists of 2 **strong**, brown Masonite presswood covers, and 2 patented **telescoping self-locking** posts. Any office girl can permanently bind your records **without using tools. Mere thumb pressure** does the work.

THOUSANDS OF USERS
swear by **Liberties** as the best and **most economical** binding method for loose leaf records. **20 stock sizes** for nearly every standard form. Special sizes cost but a trifle more. You'll like **Liberties.**

AS LOW AS 77c EACH
Don't wait. You are keeping more records than ever before, and this year you'll keep more. Write for your FREE binder now. **Just attach this ad to your letterhead** with a sample of the form to be bound. **Mail it today** with 25c in stamps to cover shipping expense.

We have 23 years of record storage filing experience behind us. We know the LIBERTY Permanent Storage binder is good and we're willing to prove it with this FREE offer.

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Honey-Tree—Coming this Summer, unless the war causes postponement, is a harvest festival honoring a kind of honey taken only from the trees of a river and swamp near the little Florida town of Wewahitchka, where the festival is to be held.

To the 1,000 or so persons in Wewahitchka and their county neighbors, about 535,000 pounds of honey bring $60,000. Tupelo honey, so called because it comes from blossoms of the tupelo gum tree, is produced over an area of 50 square miles of the Lower Apalachicola River swamp.

The tupelo blossoms in early Spring, when the bees can find no other bloom. As soon as the blossoms fall, the tupelo honey is taken and the bees turn to production of honey from other plants.

Tupelo honey is said to be the only kind which will not crystallize; some has been kept for 75 years without crystallization. It's prescribed for diabetes.

Auto Dealers—In a move to organize the small machine shop and repair facilities of the country's 40,000 extinction-expecting auto dealers, Willys-Overland Motors, Inc., Toledo, Ohio, last month began taking a count of dealers' machine tools, floor space, and trained mechanics. Information on sales and distribution facilities was also sought.

Object of the survey is to learn whether the auto dealer can draw a little business life from the manufacturing of light war materials; and whether he can furnish a possible distribution channel for such civilian defense items as gas masks, stirrup pumps, and air raid shelters.

Porcelain—One of the materials being tried as a substitute for the phenolic plastics needed for war uses is porcelain. Westinghouse Electric & Manufacturing Company recently added two new buildings to its plant in Derry, Pa., where a type of porcelain called Prestite is made. This is molded from dampened clay in steel forms under pressure. After being shaped in an hydraulic press, it is glazed and fired. Its manufacture requires only 36 hours instead of four days. It is strong, nonporous, and resistant to electricity.

Introduced less than a year ago, Prestite was used at first only for insulating parts of high voltage equipment, but lately Westinghouse has replaced the scarcer plastic with Prestite in other products, in parts for ignition systems, in thermostats for industrial furnaces, even in stoppers for perfume bottles. The porcelain is also useful in water-cooler parts, formerly aluminum, and in valve seats which previously were rubber.

Derry's plant expansion also includes facilities for a process called "Solder-Seal," which produces a vacuum-tight seal between porcelain and electrical apparatus containing oil or gases.

WAMPUM TO "CONTINENTALS"

(Continued from page 18)

the islands in the Caribbean Sea were well supplied with Spanish coins. This specie crept into the colonies through foreign trade and through operations of buccaneers. By the end of the seventeenth century most colonial coins were thus Spanish and Portuguese, the Spanish silver dollar or "piece of eight," Seville, Peru, and Pillar pieces of eight, pistoles, doubloons, ducatoons, crusadoes, guineas, Johannes, and Lyon dollars. It was difficult to reduce such a variety of units to a common standard, especially when these coins differed considerably in weight and fineness, and the original mint errors had been magnified by the universal practice of clipping and sweating.

A mint was finally established in Massachusetts in 1652 to bring order out of chaos. It produced three-penny pieces, six-penny pieces, and the famous pine-tree shillings. In 1684 the mint was closed by the British.

Partly because of its low metallic content, and partly to attract more specie by a favorable estimation, the colonies vied with each other in raising the valuation of the coin mostly in use, the Spanish silver dollar. This mighty coin was the original of our American dollar. While a standard piece of eight with seventeen and one-half pennyweight of silver had a mint value of four shillings, six pence in English silver coin, the rate was generally made

five shillings in the early life of the colonies for convenience. The colonists kept their accounts in English monetary terms of pounds, shillings, and pence.

The value of a piece of eight accordingly was expressed in shillings and pence. In 1652 Massachusetts raised its valuation to slightly under six shillings; a little later Virginia increased the value to over six. The legal value of the identical coin varied by 34.5 per cent in the different colonies, quite an unnatural discrepancy.

The objects sought by the colonists in establishing the legal rates of metallic coins above their sterling value were twofold: to attract "hard" currency from other regions where lower rates prevailed, and perhaps to induce pirates to bring their booty in; the age-old belief of the debtor class that inflation in the guise of an arbitrary higher value of legal tender would provide cheap money.

The use of commodity money and small quantities of metallic currency of various kinds at the same time, presented many natural inconveniences to domestic commerce. Prices differed according to the medium of exchange which one used at the time; namely, country pay, money, pay as money, and "trusting." For instance, in New Haven around 1700 "country pay" was represented by grain, pork, and beef at the prices set by the General Court that year. "Money" was represented by pieces of eight, pine-tree shillings, silver coins of the various kinds already mentioned, and if the amount was small, by wampum. "Pay as money" was represented by provisions at prices one-third less than those set by the General Court. "Trusting" was the result of an individual bargain between the merchant and the buyer in the extension of credit.

Paper Money Beginnings

John Winthrop, Jr., first governor of Connecticut, carried on extensive correspondence with friends in the Royal Society in England in which he elaborated upon an approach to paper currency. This was a great step in seventeenth century economy of trade as paper currency was unknown at the time.

The author explained that to multiply the trade of England, a new supply

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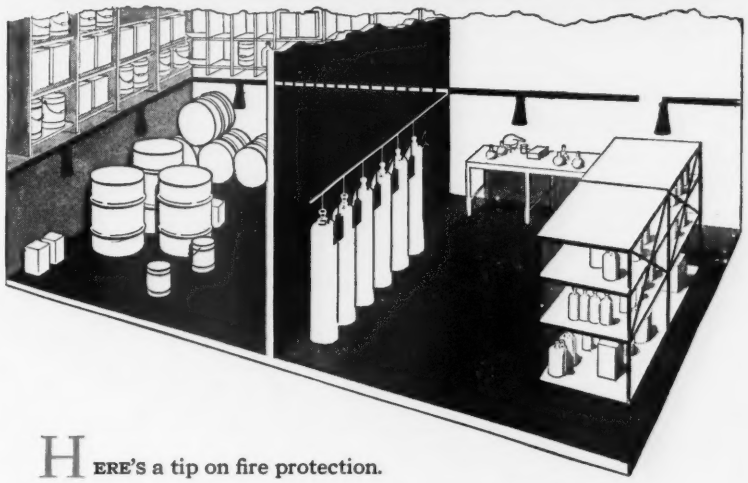

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of gold or silver was essential. This lacking, he advocated an unprecedented and unknown type of currency, paper money, bearing no interest, secured not by gold or silver but by other "sufficient" assets, mostly real estate. This currency would be accepted, according to the plan, by an increasing number of merchants who would display a sign indicating they would accept the unexampled currency at its face value. It was, however, many years before paper money made its initial appearance on this continent.

English-French Wars

The first of four English-French wars for colonial possessions, known in the colonies as King William's War, broke out in 1689. Early French-Indian successes led Northern colonies to unite for defense and offense. New York and Connecticut were to raise an army to attack Montreal. Massachusetts was to send a naval force against formidable Quebec. Success would break French power in America. The expedition failed, costing Massachusetts 50,000 pounds.

It was hoped the cost of this expedition would be paid from the proceeds of victory. Threats of mutiny at Boston now called forth an extraordinary and unexpected measure—the first issuance of paper money, in December, 1690. It was the origin of paper money not only in America but in the entire British Empire.

The first issue amounted to 7,000 pounds, the second, a few months later, 40,000 pounds. Currency was printed in denominations ranging from five shillings to five pounds. It was soon learned, however, that the simple printed promise to pay would not maintain value. The experiment had to be tried to be learned, and then tried, over and over again in one colony after another.

The General Court of Massachusetts now supported the credit of the outstanding paper currency in 1692 making bills legal tender and receivable for public taxes at a 5 per cent premium over silver, and secured by public taxes and other revenues. This measure succeeded in keeping the paper money on a par with specie for about fifteen years.

Queen Anne's War began in 1701. At the end of 1702 paper money outstanding in Massachusetts had been reduced to 5,000 pounds. This war increased outstanding obligations year by year, until at the end of 1708, the paper currency re-issued over the promise of Massachusetts amounted to 43,000 pounds. In 1709 a second issue, this time for 30,000 pounds, was provided.

As the volume of paper currency grew its current value became less and less. By 1714 it is estimated that 194,950 pounds had been issued in Massachusetts alone. It was then at a discount of 30 per cent and as it depreciated it drove out what little metallic money remained in circulation. At the same time prices rose in terms of the depreciated paper currency.

In 1745 King George's War broke out. The French had an "impregnable" fortress in Louisburg, but the New England colonies captured it. By this time the credit of Massachusetts was so low that the colony could float no more paper money.

After three years of investigation English Parliament voted to repay Massachusetts for actual expenses incurred during the campaign. The sum of 183,649 pounds, 650,000 ounces of silver, and ten tons of copper were remitted to Massachusetts on condition that outstanding paper currency be redeemed. With it was purchased Spanish silver pieces of eight and English copper coins of one-half pence and farthings.

Until June 3, 1751, the treasurer of the colony redeemed outstanding paper currency at the following rates: for every 45 shillings in old tenor bills, one piece of eight; for every eleven shillings and three pence in the middle tenor and new tenor bills, one piece of eight. There had been three issues of currency with different values; as the yearly issue sank lower and lower, a new issue had come out at a higher stated value. The six commissioners redeemed 50,705 pounds in the old tenor, 38,431 pounds in the middle and 1,703,099 in the new tenor.

Votes First Paper

In June, 1775, Congress authorized the first issue of paper money amounting to $2,000,000. It was confidently believed that the debt thus created would be promptly redeemed without loss to anyone. It was to be a temporary measure! By the end of 1776, $25,000,000 had been put into circulation and depreciation amounted to 30 per cent.

By the end of 1777, $38,000,000 of "Continental" paper money had been issued and the depreciation had risen to about 70 per cent. Forty-two emissions of paper currency were authorized by November 29, 1779, for a total of $241,552,780 and $191,500,000 had actually been issued.

Paper currency of $160,000,000 had been issued prior to September 3, 1779, and by that time, the States had provided no more than $3,000,000 in tax money for its redemption. Moreover, the States had issued their own paper money. State and "Continental" currencies now circulated side by side, each affecting the value of the other. Since the aggregate of all kinds of paper money was greatly in excess of reasonable needs for a medium of exchange, the paper currencies depreciated early and rapidly, and the prices of all commodities and services rose correspondingly.

System Breaks Down

By the latter part of 1770, the entire currency system had broken down hopelessly. In this predicament, Congress requested the States to furnish, not money to purchase supplies but the actual supplies such as corn, wheat, flour, hay, and oats for the armies in the field. It must be kept in mind that the Continental Congress had absolutely no authority over the States; recommendations for raising funds could be made but not enforced. With thirteen sovereign States, the situation was beyond any sound, intelligent, reasonable approach. The colonists were throwing off allegiance to Great Britain and there was no disposition to substitute another strong central government at this preliminary stage of our national history.

Finally the General Court of Massachusetts passed a "Tender Act," enabling debtors to turn over to the sheriff of their own county, at appraisal, any cattle, grain, deal boards, or other produce, in payment of debts. This process completed the circle of transmutation from currency into no currency.

The merchants now began to look to France, Spain, and Holland for loans which would bring in specie. Between 1777 and 1783, France extended $6,352,500, Holland $1,304,000 and Spain $174,017 in addition to which France made outright gifts of $2,107,000 and Spain $181,500. Most of these funds were dis-

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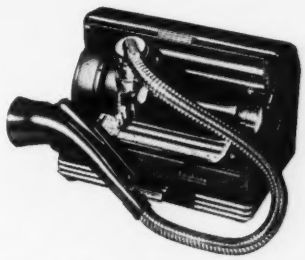

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bursed in Europe for the purchase of necessary war supplies to carry on the Revolution.

Finally it was decided to retire the "Continental" bills from circulation. On March 18, 1780, the Continental Congress enacted legislation to the effect that the States should collect taxes and use the money to redeem the outstanding bills at the rate of 40 paper dollars for one silver dollar. "Continental" paper currency was retired by this process, leaving $71,500,000 in circulation.

Hope for Redemption

After 1781, the remaining bills depreciated to the vanishing point but remained a medium for speculators who hoped, that in the not too far distant future they would be redeemed by Congress.

The bills issued simultaneously by the States consisted of both paper currency and interest-bearing treasury notes, an aggregate of $250,000,000. The only security behind most of these obligations was the credit of the respective States, many of which would not even levy taxes for the redemption of their own currency. Depreciation was about on a par with "Continental" currency. After 1780, the paper money of the States was drawn in as tax money at various rates of depreciation. By this process the indebtedness of the States represented by paper currency was largely effaced by the end of the war, the depreciation having served as a forced means of obtaining credit from everyone.

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PRODUCT DEVELOPMENT

(Continued from page 12)

processing necessities, the nature of civilian patronage, or the spectrum of human wants when peace comes once more. Through the intelligent application of principles of aggressiveness and of receptiveness, we must discover among these infinite possibilities, those which best co-ordinate with our unique industrial capacities and abilities.

Common Characteristics

In each instance many must be called and few will be chosen. We must erect great cornucopias to be operated in reverse, for into them we shall continue to pour a constant stream of suggestions, proposals, opportunities to be analyzed and assimilated to the end that there may be a small but dependable trickle of practical ideas which will earn for us a rightful place in the present and future scheme of industry.

In each instance many new contacts must be sought, acquaintances made, and human co-operation gained. Here is a skill normally inherent in distribution which is becoming more and more a necessity to administrative progress. Product development in its last analysis is development in human relations. As a great philosopher has said, the surest measure of civilization is the degree to which its people can practise the fine art of co-operation.

In each instance new relationships must be established, new skills and disciplines organized, and new activities encouraged. Somewhere within each organization there must be that indomitable quality of advance which despite all odds breaks forth and overflows into new channels, bringing progress in its wake. As new generations are vital to continuing civilizations, so are new ideas and products equally vital to continuing industries.

In each instance qualities for corporate success in product development include imagination, intelligence, judgment, and determination of a high order; and there now attaches to the responsibility for new product development in wartime a sharp necessity which gives it important place at the high table of American industry.

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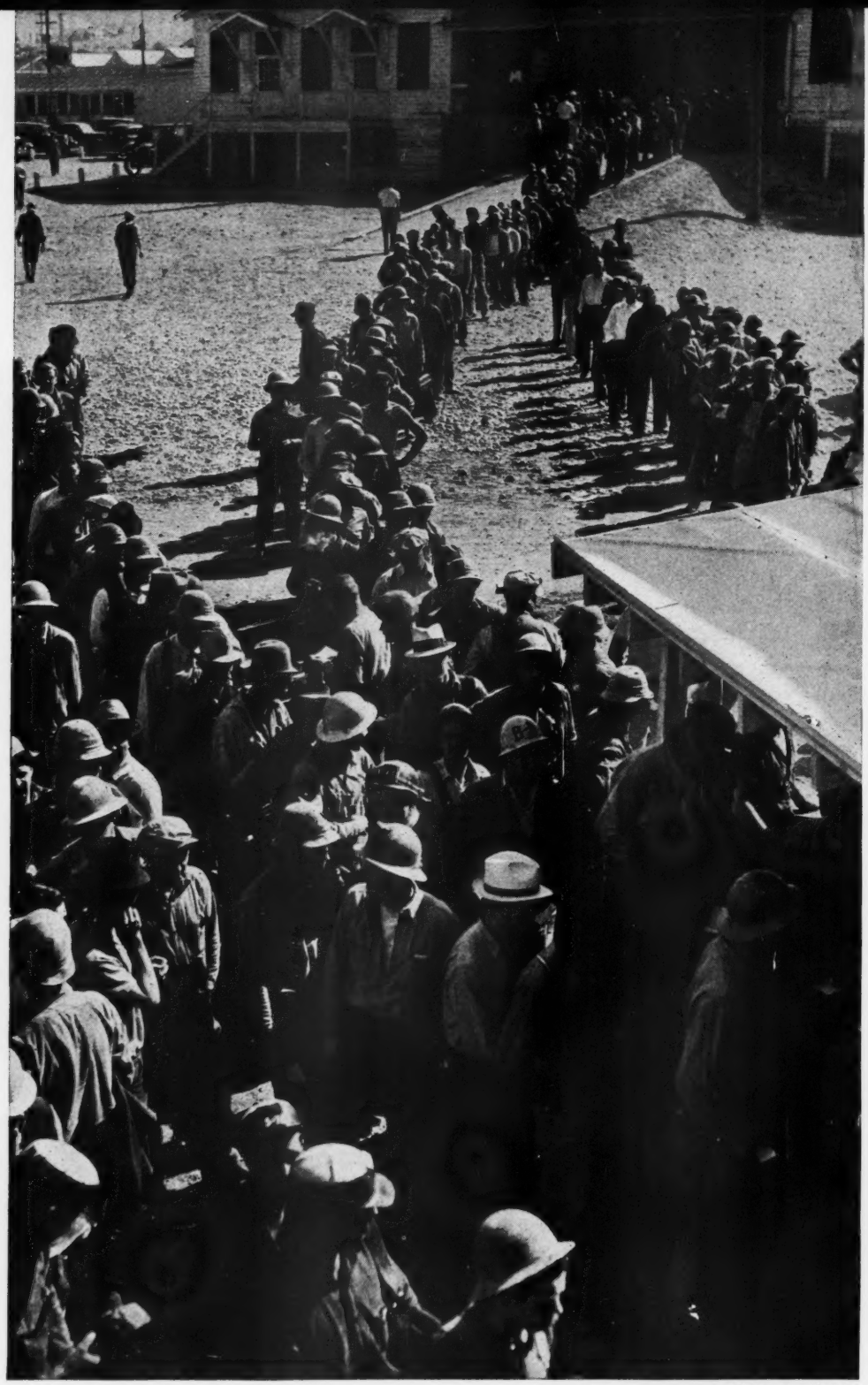

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As war production increases, fewer commodities will be available for domestic markets, and yet incomes will be as large or larger than ever. This excess of demand over supply provides a tremendous force for price increases—it is the soil in which inflation grows.

The most effective way for the economy to maintain balance is by sopping up the excess purchasing power as far as possible through taxes and Government borrowing from consumers' funds.

If we keep this basic situation in mind, it is obvious that widespread wage and salary increases, justified by the rising cost of living and the higher level of personal income taxes, will merely aggravate the situation and lead to a further adjustment upwards of prices. The war production program inevitably requires less consumption. Higher wages and salaries will not increase the goods available for all of us.

Willard L. Th

E D I